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Caution Required To Uphold Markets

Consideration Of Large Gasoline Stocks In Relation To Impending Record Consumption This Year Should Prevent Break In Prices. Heavy Export Buying Needed To Bring Immediate Strength To Motor Fuels; May Forecasts.

CAUTION will be one of the greatest needs of the petroleum refiner during May, analyses of the present situation in the industry and forecasts of the trend for May by NATIONAL PETROLEUM NEWS staff men indicate.

Because of the high rate of production during months of relatively low consumption, the largest stocks of motor fuel in the history of the industry have been accumulated. But, unless refiners and distributors regard large stocks from a pessimistic viewpoint and not in their relation to the great consumption which is bound to develop when hot weather comes, fear of the situation should not develop. Need of caution, however, is again emphasized.

Curtailment of runs to stills has been started by refiners of several regions but this has come too late to result in strong markets for the immediate future. Production of gasoline has been much greater than consumption and financially weak refiners are being forced to dump their stocks on the market for whatever price they will bring.

Jobbers are convinced there is a buyers' market and are buying on a meager basis, a normal condition when the statistical position of the industry is as at present. Jobbers are taking, and will continue to take until a strong forward movement of prices develops, only sufficient goods to cover immediate needs. Only heavy export buying, it now seems, can force up the market to any material extent during May. This buying is improbable as export organizations have well filled tanks at their seaboard stations. Weak gasoline markets, therefore, are forecast for May.

If refiners do not try to force their markets and to operate their plants at full rated capacity, they will be able to place themselves in position to take full advantage of the record breaking consumption which is sure to come this year and which undoubtedly will begin to make itself felt late in May, barring more cold and rainy weather.

The wide margin between tank car and tank wagon markets has weakened the tank wagon structure and local price wars now developing threaten to spread over several distributing territories including that of the Standard Oil Co. of Indiana.

The trend of kerosene also is downward because the spring demand is sliding off. Prices are expected to recede gradually to a bottom around 4 cents, Group 3. Fuel will probably decline further.

Pennsylvania lubricating oils will be strong throughout the month and price changes will depend largely upon the price of crude oil. Mid-Continent oils lack strength and probably will be a little cheaper later in the month.

In production the trend is downward. Declines are expected in Oklahoma and California. Slight increases are forecast for Texas because of the amount of developing now in progress. Slightly greater recovery of crude also is forecast for southern Arkansas but elsewhere the present or a slightly lower rate of production may be expected.

It is doubtful whether there will be a change in the price of Mid-Continent crude; certainly if one is made it will not be a reduction. Principal buying agencies are bidding for connections to new wells. On the other hand, a small reduction in the price of Pennsylvania crude would not be a great surprise.

Mid-Continent Production

PRODUCTION in Oklahoma probably will decline somewhat during May as Burbank is evidently past the peak of its recent large flush production, and no other field in the state apparently can reach important status within the next 30 days. Increased production in older fields, brought about by cleaning out and otherwise rehabilitating wells which had been allowed to go down in output during the proration period, also has probably reached its limit, and these fields can do no better than hold their own from now on in the absence of additional wells or discovery of deeper sands.

Burbank has been declining for the past two weeks, and may be expected to continue to do so until wells now drilling on recently acquired leases begin coming in, which cannot be before June 1, in all probability. Tonkawa also is declining, in spite of the well producing from the new deep sand. What its production will do when numbers of wells are drilled into the deep pay is, of course, problematical, but these wells must go below 4000 feet, and cannot be completed before mid-summer. Important completions in Stroud and Cromwell are to be expected during May, and should provide valuable information as to the future status of these fields.

Indications now are that the crude market during May will tend to overcome somewhat the softness that has been apparent in it for the past several weeks, for with production declining or standing even, increased consumption brought about by spring weather should have a strengthening tendency. It is probably safe to say that if there is any change in Mid-Continent crude prices in May, it will be upward, although it must be admitted that a crude advance looks less likely at the moment than it did earlier this year. A reduction in

crude, however, is even less likely to occur.

Drilling in the Mid-Continent showed a substantial increase during April, and should continue to increase even more markedly in May, as weather conditions improve. The search for deeper pay horizons in old fields will continue unabated. Wildcatting in Oklahoma will undoubtedly increase from now on, but it is apparent that present crude prices are not high enough to cause a general exploratory campaign. Deep wells, such as have become common in the Mid-Continent field, cost so much to drill that wildcatting at present prices becomes more hazardous than it is ordinarily.

Production in Kansas continues to decline gradually, and may be expected to do so until important new fields are found. This state is getting a general wildcat play, especially in the western portion, and may furnish some very interesting developments during the coming summer.—A. F. Hinton.

California Production

CALIFORNIA in May will show definitely the declining production that in other fields of the country is less apparent than here. With all but 20,000 barrels daily of its shut-in production now opened up, and what remains being scattered, it is no longer possible to increase daily averages from potential production as practiced in April.

With the exception of Dominguez and Torrance-Redondo, no economically important field in the state could increase its production. Torrance appeared to have reached a level at, or near, its peak when for three weeks in April it was maintained around 55,000 barrels daily only by the completion of a large number of wells each week.

Before the end of May, allowing for completions offsetting parts of the decline, it is conceivable that California daily production will be down below the 625,000-barrel mark unless some occurrence that cannot be currently measured should result.

It has been pointed out in these columns that increases in California daily average production from the low levels of recent weeks reflected entirely the opening of old wells shut in at the time of the 1923 congestion. Even the deeper wells of of this shut-in classification have been, most of them, open long enough that slightly increased production resulting from accumulation of pressure is now dissipating itself and the older fields show declines as well as the more recently flush pools.

Non-refinable crude produced in California averages slightly more than 100,000 barrels daily against approximately 650,000 barrels total production of the state. Even without taking cognizance of tanker shipments of refinable oil to the Atlantic Seaboard, crude available for refineries from production is now approximately 25,000 barrels daily less than the 578,000 barrels rated capacity of plants. It is of interest, however, to note that the average throughput of California plants in 1923 was 405,000 barrels daily as compared with estimated throughput over 1924 of 450,000 barrels daily. The record throughput daily for the high month of 1923 was about 480,000 barrels.

It is apparent, however, that as declines from current levels follow, intercoastal shipments through the Panama Canal will be cut down; as the California interests are in the position of preferring to keep their plants running on crude and filling contract requirements with gasoline or tops, where adjustable clauses permit this. However, there probably will be no disposition to make shipments of light oil where it is not required as an alternative by contracts. This is in keeping with the California policy of conserving its petroleum for home consumption.

Long Beach production has been dropping off in April around 1,000 barrels daily after allowing for completions that failed to offset the declines of old wells by that amount; Santa Fe Springs about 14 percent monthly; Huntington Beach about 9 per cent monthly; and Torrance-Redondo about 5 per cent monthly, until the completions rate held production fairly steady around 55,000 barrels daily in April, the larger number of new wells only making this possible. These rates appear approximately accurate for May, although Long Beach may now take on somewhat increased rapidity of decline.—Paul Wagner.

Rocky Mountain Production

ROUTINE completions are all that are expected during May in Wyoming and Montana and these in not large enough number to do more than maintain present production. Salt Creek will probably continue under 100,000 barrels at which figure additions continue to be made to stocks of crude oil as well as gasoline.

No intimation as to the policy adopted by the Sinclair Crude Oil Purchasing Co. on stocks available for movement through the Sinclair line eastward has been forthcoming thus far. It is probable that the line will be operated at part capacity, however, as the amount of oil in storage at Clayton is such that some must be moved before long or more tankage built.

In the Fort Collins district of Colorado a test being drilled in the general vicinity of the large gas well brought in last winter is getting to the depth where a completion may be had during the month.

There is some betterment of conditions in the territory so far as disposition of oil is concerned, with increased takings from the Sunburst field of Montana and resumption of runs from the Mule Creek field of Wyoming. Increased refinery runs in Canada are chiefly responsible.

For the coming month there is foreseen no particular change in the terri- gasoline which, in view of crude oil stocks available, could scarcely influence the crude oil market. This is dependent almost absolutely upon what haptory except in larger consumption of pens in the Mid-Continent.—L. E. Smith

Texas-Louisiana-Arkansas Production

SLIGHTLY increased production averages may be expected in May as a result of operations in Texas, with only small changes in north Louisiana and south Arkansas Principal gains in Texas are to be expected in the Edwards limestone division of the Balcones fault zone, where further extension of the Luling field is threatened; and in a smaller way in that part of the shallow sand region of the greater Wichita Falls district in Archer county.

The Woodbine sand division of the Balcones fault zone does not promise anything in the way of increased production in the Mexia-Powell region that would bring about greater daily output. This division, however, is continually faced with the possibility of one or another of the 15 or 20 wildcat tests under way resulting in the discovery of a new field.

Depending upon whether such a woodbine sand field were located on a closely blocked structure or whether smaller leaseholds prevailed would hinge the rapidity of development, viz., whether the pool would be kept to such a field mark as Mexia at the 100,000 barrel daily level or whether it would form the sharper development peak of another Powell above 350,000 barrels.

Gulf Coastal Texas may be expected to remain as it has been for months, with only minor fluctuations in the general Ranger territory and elsewhere than Archer county.

Southern Arkansas may be expected to maintain itself with possible small increases in daily average production; and north Louisiana, unless the Cotton Valley field shows more important producing propensities than it has so far, probably will remain virtually unchanged.—Paul Wagner.

(Continued on page 20)

THIS WEEK'S OIL NEWS SUMMARIZED

Production

(Production News, pp. 33-43)

ALL important districts, except northern Louisiana and Arkansas, showed a decline in average daily production for April 26 from the week previous. Even in this district it was Caddo light territory and Haynesville, and not Smackover, responsible for the increase.

In the Mid-Continent territory, at least as far as Oklahoma and Kansas are concerned, it is thought that the reconditioning of old properties since the days of proration has gone about as far as it can in stimulating production by this means and it is doubtful if new wells over the next two months will offset natural declines in settled production. In California it is considered that the bringing back onto production of old territories which were held in during the flush period of the newer fields will not offset the decline in these newer fields.

Drilling operations over the country are increasing, partly at least due to improved weather. In Oklahoma over 1000 wells are drilling, the largest number in some time.

Every week brings to light plans of the principal oil interests to give the Rocky Mountain territory, including western Kansas, a very thorough working over this year.

Daily average production for the past two weeks is estimated as follows:

	April 26	April 19
Oklahoma	421,875	424,590
Kansas	70,915	71,105
Wyo.-Mont	128,040	135,155
La.-Ark.	190,302	185,562
California	628,500	630,400
Texas and Coastal Louisiana	381,315	383,060
Eastern	103,700	103,500
Total	1,924,647	1,933,378

Financial

(Financial News pp. 108-110)

OVERPLAYING of their hands by the bears resulted late last week in a sharp rally in prices of oil stocks on the New York Stock Exchange. After a score of issues were forced early in the wek to new lows for the year, several items of news which were interpreted as bullish caused an upturn and most of the listed shares show gains from a fraction to several points over the close of the previous weeks.

One of the leading items was a statement saying the Standard of Indiana was selling 20 per cent more gasoline than a year ago. The advance in price of bunker and Mexican crude oils also stimulated stocks. The resumption of dividends by Mexican Seaboard had a strengthening influence.

Atlantic Refining advanced 10½ points on the rally. Some of the medium and low priced stocks gained proportionately.

Many of the Standard Oil stocks on the New York Curb did not respond so readily as those on the Exchange although a few showed good recuperative qualities.

Salt Creek Producers was the outstanding issue among the Independents on the Curb. It was active and rose to a new high at 25¼. Gulf recovered all of loss suffered early in the week and closed a point higher than the preceding week. Cities Service was off a half.

Early Gasoline Figures If Industry Helps

WASHINGTON, April 26.—The Bureau of Mines is willing to get out by telegraph on the first of each month, figures showing stocks of gasoline on hand, provided first, that the demand in the oil industry for such prompt service is sufficient to warrant it, and second, provided the major number of refining companies are willing to wire in their reports on stocks to the bureau in time to make such early dissemination possible.

This is stated in an announcement just sent out by the bureau. Concerning this expedited service, the announcement states:

"The impression appears to exist that gasoline stocks are a good barometer of the situation from the refiner's standpoint and, if such figures could be compiled and given out shortly after the close of each month, a valuable service would be rendered the petroleum industry.

"The Bureau of Mines is anxious to be of maximum service to the petroleum industry, and is willing to compile these figures each month if there is a real demand for information of this kind. Unless the refiners are willing to cooperate by promptly telegraphing the figures at their own expense, it would not be worth while attempting the experiment for, unless the totals include a major portion of the stocks on hand, the figures would be of little value."

Cleveland Stock Market

April 25

	Par	Bid	Asked	High	Low
Canfield Oil Co.....	$100	135	.....	.....	.....
do pfd.....	100	.....	94	95¾	95
National Refining...	25	39	40	53	33¾
do pfd.....	100	123	130	126	116
Paragon Refining...	25	6	6¾	12¾	5¼
do pfd.....	100	55	60	75	40
Fred G. Clark Co...	10	3	3½	6	2

Marketing

(Marketing News pp. 97-110)

GASOLINE markets are weak as stocks continue to pile up at refineries in all districts. Operations are being curtailed in all districts where supplies of finished products are becoming burdensome. This fact with the arrival of the season of heavy motoring should help to keep the markets from sinking to a disastrous level.

Dumping of gasoline on the market by refiners who must get cash to continue necessary operations, caused a reduction of ½ cent in the tank car gasoline market of the Mid-Continent during the last week. Whether improved demand will bring much strength in the immediate future is doubtful because of sales already made at low figures to resale agents.

Two bright spots, however, were evident the first of this week. Jobbers from small towns which are practically isolated during the winter and spring months by unimproved roads in the territories surrounding them, were in the Chicago market for motor fuel, and a larger volume of inquiries for spot goods was being circulated through the western Pennsylvania refining destricts. These tended to steady but not improve prices. Large jobbers were still buying at a small rate or staying out of the market.

Kerosene has been brisk in the Mid-Continent and elsewhere the movement has been fair to good. Prices, however, have not been strong enough to cover the losses many refiners are suffering from the low price of gasoline. Other heavy oils, except Pennsylvania cylinder stocks, have been soft with a tendency toward lower prices. Higher prices for Mexican crude oil has resulted in an advance of 10 cents a barrel for bunker oil but fuel oil in the Mid-Continent is cheaper than a week ago. This is due to large output and decreased railroad and industrial consumption.

Foreign demand for American oils has subsided for the present and because of this an easier tone was evident the first of the week in Pennsylvania stocks. Enough orders are held by refiners in the Appalachian fields to tide them over to the next brisk buying period and to maintain present prices well. This next buying period should develop as soon as the heavy motoring season arrives.

The low price of gasoline at the refinery has weakened the tank wagon price structure. Middle western observers of the gasoline situation predict a reduction in the tank wagon price in Standard Oil Co. of Indiana unless demand picks up quickly during May.

Mid-Continent Markets

MID-CONTINENT gasoline markets are in the most precarious position they have occupied in many months. Having kept crude runs at a high rate during dull sales months refiners have built up large inventories which they are financially unable to carry indefinitely.

Jobbers are thoroughly sold on a buyers' market and are likely to remain so, buying sparingly to meet only actual current needs, until the markets exhibit definite strength.

It appears unlikely that domestic business will reach such a great volume in May that Mid-Continent markets will show any very sharp advances. Heavy export buying would probably be necessary to bring Navy back above 11 cents per gallon in the next 30 days. In view of the condition of the export market it is doubtful whether large export business will develop.

If Navy gasoline falls below 10 cents for any extensive period it is highly probable that the Standard Oil Co. of Indiana will be forced to reduce its tank wagon to avoid disastrous price wars. Should the tank wagon be reduced the jobber would doubtless be confirmed in his bearish attitude and buy even more slowly.

Considerable quantities of gasoline have been sold ahead for May to resale agents. This will have the effect of retarding any upward movement of the market. High gravity gasolines are held in excessive amounts and will probably be weak throughout May.

Kerosene will probably weaken gradually as spring needs are satisfied. The average price of 41-43 gravity water white will probably be 3⅞ to 4 cents per gallon.

Wax is too thoroughly sold ahead to weaken below 5¼ cents per pound during May. Neutrals are becoming soft and will probably be selling at concessions during the month while steam refined oils will probably be fractionally cheaper. Bright stocks are expected to hold firm.

Fuel oil will probably decline further although the reductions in price will probably be small and grudgingly given. The average price of 24-26 fuel in Group 3 for May will probably be 85 to 90 cents per barrel.—J. C. Chatfield.

Western Pennsylvania Markets

THE month of May for the western Pennsylvania refiner seems to be filled with all the madness and doubt which the poets have attributed to it. Except for cylinder stocks and paraffin output of which during the month has already been committed, the next four weeks are fraught with perils.

Only a reduction in crude oil prices which is not improbable can have any serious bearish effect on cylinder stocks. But with gasoline, the Pennsylvania market is largely what surrounding markets make it. It must meet the competition of the Mid-Continent refiner on the west whence is coming a considerable quantity of cheap distress gasoline. On the east lies the California motor fuel which it yet not to be ignored.

It therefore is improbable that 58-60 Pennsylvania gasoline will be able to reach the 15-cent price level this grade held to or above throughout February.

Good weather may split the difference between the present and the February prices and return this Pennsylvania grade to 14 cents. On the other hand a cold and rainy month would cause a decline probably to 12½ cents because of the competition with gasolines from fields having cheaper raw materials.

Good motoring weather also will improve the demand for viscous neutral oils and a recovery in prices which are now 2 cents under the peak for the year.

Kerosene should be steady throughout the month and it now seems that general price movements will depend wholly upon the price of crude. Good gasoline demand will improve the price of 36-40 fuel oil which is used for cracking but if this demand does not materialize prices threaten to decline.

The crude oil situation is easier in Pennsylvania than at any time since last fall. Producers are now offering crude but refiners are not inclined to take more than their allotments. Those not having allotments are talking of crude price reductions and are turning down offerings in excess of their regular requirements.—R. B. Stafford.

Chicago Markets

STANDARD Oil Co. of Indiana will reduce the tank wagon price of gasoline early in May or everybody will wonder what's holding it up. Of course any individual who claims to know what the Standard Oil Co. of Indiana is going to do about prices needs "rest and expert attention". But after all there is a certain rationality which characterizes the ordinary performances of that corporation.

How much of a cut will come is just as uncertain as the date. It probably will not exceed 2 cents, and if the event is postponed until the tank car price of spot Navy gasoline f. o. b. Group 3 gets down to 10 cents, it might be 2 cents without surprising anybody. Whether the Standard makes an openly-announced cut or slides the price structure down to a lower level by meeting Independent competition as it did once last year, remains to be seen, but the sliding process has already started. Independents in scattered localities are operating on a margin which allows them to cut prices.

It is not unlikely that the burden of oversupply may push the price of Navy down to 10 cents before the middle of May. It is certain that the Group 3 price can not advance. California holders are in a position to meet the spot Group 3 price along the Atlantic coast and make the offers flat over the summer.

Kerosene which is now the strongest item in the market and hard to sell at 5 cents is not likely to be higher during May. The demand is failing already. Jobbers are prepared now to take cars of their customers' requirements for early plowing. Although the supply at refineries is small and not likely to be pushed on the market, the price probably will weaken to 4½ or even 4¼ cents for lack of demand before harvest time.

Domestic fuel (distillate) which is now quoted at 3½ cents will not likely be lower, although trade in it will be negligible. The price will hold because if it were any cheaper it would meet the gas oil price. In like manner, gas oil can not fail much, but it will not strengthen in May as there is no demand in sight. Crackers will not be buying it this summer, at least not in large volume and gas companies will not be seeking contracts before the middle of June.

Fuel bids fair to stand steady over the month. It is weak now. Some recent sales have been made at $1 but not to big users. The lack of demand generally and the unpromising outlook for the smokestack trade indicate that fuel oil will not strengthen much. However, it is almost certain not to decline to any great extent. It is already down to a spot price of 50 per cent of the posted price of crude.

Superfluous gasoline is likely to curtail refinery operation enough to reduce the fuel supply to a point where its present price can be maintained.—W. K. Halbert.

Okla. Refiners Likely To Curtail Runs

TULSA, April 28.—Refiners in the Mid-Continent have been forced to the conclusion the past week that their production of gasoline must be curtailed if stabilization of the gasoline market is to be effected. It appears probable that the next few weeks will show a marked decline in the amount of crude charged to the stills of plants in Oklahoma, Kansas and North Texas.

In north Texas the movement to curtail runs got under way a week ago when a few refiners in that field found themselves so burdened with gasoline that they were forced to lower their prices materially and offer goods for future delivery as well as spot at a flat price below the current market. One of the larger independents in North Texas has cut his runs to approximately 25 per cent of capacity, running only contract oil for which he is obligated. A smaller refiner in the field has closed down completely for the present rather than operate at a loss. A survey of the field today indicated that a number of other refiners are running less crude than they have been during the past thirty days.

In Oklahoma major crude purchasers still display zeal in buying crude seeking connections before wells are brought in. It is not generally believed that the crude market is endangered, or that it would be weakened materially if refiners permit some of their connections to go to the major buyers.

Pennsylvania Jobbers To Organize

CHICAGO, April 29.—A meeting of Pennsylvania jobbers has been called for May 7 in Harrisburg to organize the Pennsylvania Independent Oil Jobbers Association. E. C. Maloney of the Jewel Oil Co., Shamokin, Pa., will be temporary chairman. He is co-operating with several old established Pennsylvania jobbers.

Production Of Crude Higher In March

WASHINGTON, April 29.—Production of crude oil in the United States averaged 1,919,484 barrels a day during March, a gain of almost 7000 barrels over the daily average in February, according to the Geological Survey. The greatest gain was in north and north-central Texas where the daily average rose from 280,138 barrels in February to 316,194 in March. Arkansas production jumped from 101,759 barrels to 114,161.

Production and imports of crude still exceeded domestic consumption and exports. On April 1 stocks stood at 338,531,000 barrels as against 334,892,000 on March 1. Domestic consumption amounted in March to 2,031,355 barrels daily and exports to 47,871, a total of 2,079,229. Imports amounted to 277,129 barrels daily, making the total new supply 2,196,613 barrels daily. At the March rate of consumption stocks on April 1 were equivalent to 162.8 days' supply. In February average daily consumption and exports was 2,097,069 and production and imports 2,196,724.

Daily average production by states, amounts in barrels, for the two months compare:

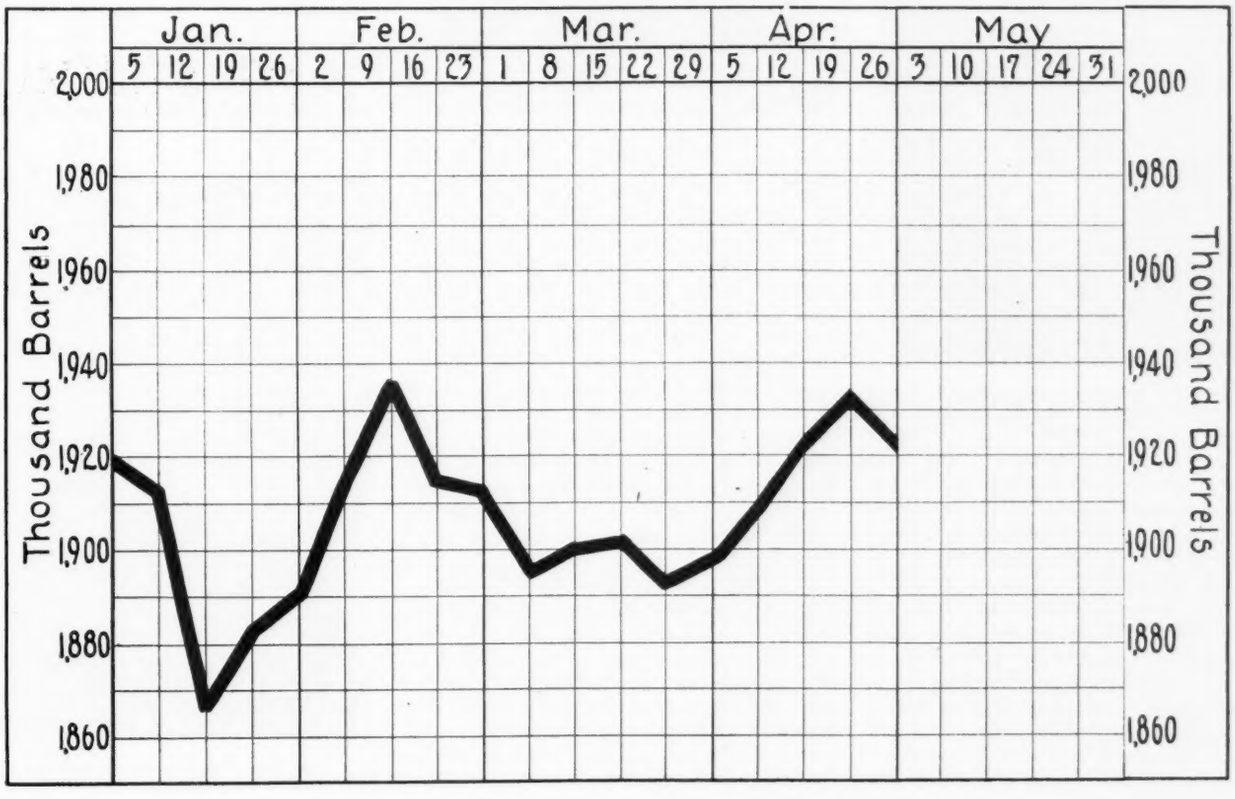
States	March	February
Arkansas	114,161	101,759
California	642,363	666,939
Illinois	23,645	22,379
Kansas	72,581	73,034
Kentucky	20,465	20,493
Louisiana	55,580	54,793
Ohio	18,419	17,897
Oklahoma	419,734	421,889
Pennsylvania	20,258	19,517
Texas	388,194	355,724
West Virginia	15,968	16,621
Wyoming	116,290	129,838

Dakota Jobbers To Post Own Retail Prices

MADISON, S. D., April 28.—According to F. P. Buehler, secretary of the South Dakota Independent Oil Mens Association, its board of directors after a recent meeting issued a public statement to the effect that its members might shortly begin to post their own retail gasoline prices, irrespective of the Standard's market. Such a course of action was openly advocated by one of their members, H. F. Brownell, of the Brownell Corp., Sioux Falls, at the St. Louis meeting of the National Petroleum Marketers Association.

This action is considered because of the existing long margin between refinery prices and tank wagon markets.

Watch The Course Of The Week's Production

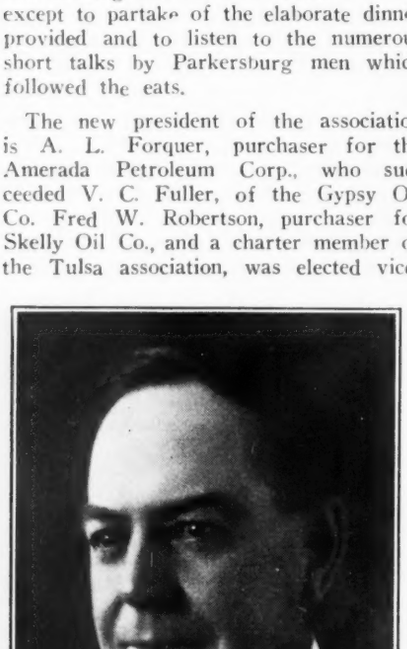


OIL FIELD SUPPLY TRADE NEWS

Tulsa Purchasing Agents Guests Of Parkersburg Rig & Reel Co.

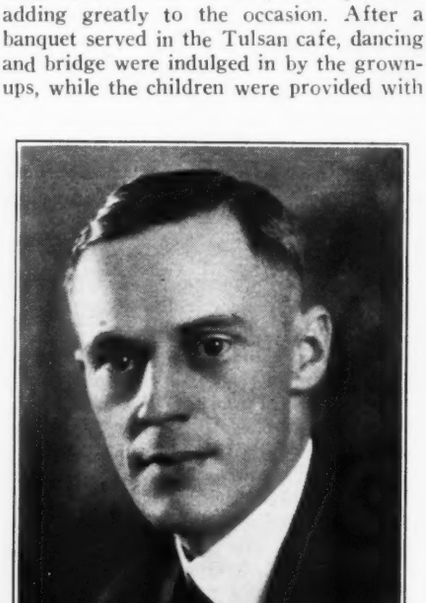
TULSA, April 23.—The Tulsa Purchasing Agents Association last night held its first meeting under the new officers recently elected for the ensuing year. Hosts at this meeting were members of the Parkersburg Rig & Reel Co. organization, who left nothing for the new officers to do except to partake of the elaborate dinner provided and to listen to the numerous short talks by Parkersburg men which followed the eats.

The new president of the association is A. L. Forquer, purchaser for the Amerada Petroleum Corp., who succeeded V. C. Fuller, of the Gypsy Oil Co. Fred W. Robertson, purchaser for Skelly Oil Co., and a charter member of the Tulsa association, was elected vice-president, as was A. C. Branson, of Bartlesville, purchaser for the Phillips Petroleum Co. It is almost unnecessary to record that O. V. Borden was re-elected secretary-treasurer, for O. V. is a necessary cog in the association machine. With his most recent re-election, he enters upon his fifth term of office in the position.



A. C. Branson, vice-president, Tulsa Purchasing Agents Ass'n., Phillips Petroleum Co.

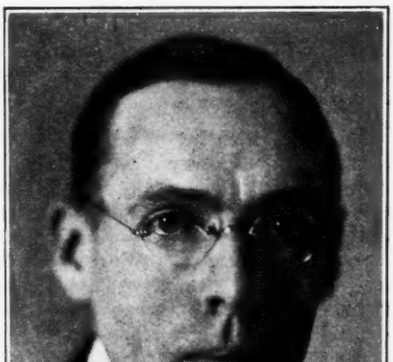
On the occasion of the installation of new officers, the association gave its annual "blow-out" in the form of a party that will long be remembered by those who attended it. Members brought their wives and children to share in the fun, their presence adding greatly to the occasion. After a banquet served in the Tulsan cafe, dancing and bridge were indulged in by the grown-ups, while the children were provided with a sand pile and all manner of toys with which to while away the hours. About 80 couples and 35 children were in attendance.



Fred W. Robertson, vice-president, Tulsa Purchasing Agents Ass'n., Skelly Oil Co.

At the Parkersburg Rig & Reel Co. party last night, D. F. McCarty, district superintendent, was master of ceremonies. Two of the officials of the Parkersburg, W. Va., office were present, A. V. Wadsworth, director of manufacturing, and D. H. Wolf, director of purchasing. In a talk to the assembled purchasers, Mr. Wadsworth, who was prominently identified with the standardization of rig irons movement, brought out the underlying principles governing the Parkersburg organization and its relations with its customers. Mr. Wolf gave a three-minute talk covering the part his department plays in his company's organization.

L. G. E. Bignell, of Tulsa, mechanical engineer for the Parkersburg Co., gave an interesting talk on vapor-proof tanks. He explained in detail the workings of many of the appliances developed by his company for preventing evaporation and fire losses in tanked oil. At the conclusion of his talk, Mr. Bignell answered a number of questions propounded by his audience.



A. L. Forquer, president, Tulsa Purchasing Agents Ass'n., Amerada Petroleum Corp.

V. C. Fuller, assistant purchaser for the Gypsy Oil Co., was appointed chairman of the association's standardization committee. Membership is left in charge of J. L. Robinson, of Skelly Oil Co. The special features committee was placed in charge of Francis Johns, of the Tidal Oil Co. Bob Bradshaw, of the D. D. Wertzberger Co., is luncheon committee chairman.

O. V. Borden, secretary-treasurer, Tulsa Purchasing Agents Association

Patent Fight Expected Over Use Of Natural Gasoline Stabilizer

By J. C. Chatfield

STAFF REPRESENTATIVE

TULSA, April 24.

INFORMAL notice was served on the natural gasoline industry at the third annual convention of the Association of Natural Gasoline Manufacturers that the stabilizing process is patented by the Carbide & Carbon Chemicals Corp., and that manufacturers making use of the process or a similar one without taking out licenses are due for trouble. J. A. Rafferty, who described the process publicly for the first time at the same convention a year ago, delivered the ultimatum at the final session of the meeting today.

Fractionation or stabilization cropped out in the convention discussions a number of times. It appeared to be uppermost in the minds of a majority of the manufacturers throughout the annual meeting. At the afternoon session Wednesday when Lloyd F. Bayer, manufacturing manager of the Tidal Refining Co., delivered his paper on the stabilizer in operation, giving the experiences of his company with the first commercial installation of the process in the west, the meeting room was jammed to capacity. Discussion at the close of the paper was spirited.

Mr. Rafferty arrived in Tulsa on the second day of the meeting and appeared at the last session while W. K. Holmes, general superintendent of the West Tulsa refinery of The Texas Co., was reading his paper on the use of natural gasoline in a straight run refinery. The address of Mr. Holmes placed stress on the necessity for stabilization or fractionation of natural gasoline.

In discussion following the paper it was brought out in response to a question that Mr. Holmes has developed a stabilizer which is in use at the natural gasoline plant operated in connection with the West Tulsa refinery. Patents have been applied for on the process and Mr. Holmes announced that it would be offered for sale to the industry when all complications of obtaining patents are cleared up.

Rafferty Illustrates Point

At that point W. M. Welch, vice president of the Tidal Refining Co., who was presiding at the meeting, discovered the presence of Mr. Rafferty in the audience and asked him if he had any remarks to make about stabilization.

Mr. Rafferty smilingly said that he had not dared to hope that his seemingly wild claims for the stabilizer made a year ago would create so much interest and discussion among the natural gasoline manufacturers. He delivered his ultimatum to the group in the form of a story:

"There was a colored gentleman in Arkansas who had just been found guilty by the jury of grand larceny," Mr. Rafferty said. "The judge; calling the negro up before the bench, told him that he was about to sentence him to imprisonment in the state penitentiary at hard labor for eight years.

"'Is there anything you would like to say for yourself before I pass sentence?' the judge asked.

"'Jedge,' the negro said, "All I have to say is that you all white folks are mighty darn liberal with other folkses' time.'

Other People's Ideas

"The moral of this little tale," Mr. Rafferty said, might be summed up in our idea that 'Some of you folks are mighty darn liberal with other people's ideas.'"

Mr. Rafferty did not develop the subject much further. He stated that he was an operating man and did not know anything about patents.

"Patents are matters for the courts to determine," he said, "All I have to say is: may the best stabilizer win."

Aside from his public statement Mr. Rafferty was not inclined to make any additional remarks without advice of counsel.

Application for the stabilizer patent was filed with the patent office by Harold E. Thompson of Clendenin, West Virginia, the inventor on Aug. 29, 1921. The patent was assigned to the Carbide & Carbon Chemicals Corp. and issued under No. 1,429,175 on Sept. 12, 1922.

Vital points of the patent are given in claims 7 and 8 of the application in that these are based on the stabilized product, produced by whatever method. The first six claims of the inventor relate to the process utilized which it is generally thought might be varied and still produce approximately the same result as is indicated by the fact that there are now approximately a dozen applications for stabilizer patents before the patent office for consideration.

Covers Propane Free Product

Claim No. 7 of the Thompson patent is: "As a new material, a liquid having the characteristic composition and boiling curve of a natural gas gasoline, containing more butane than petroleum gasolines, and being free from propane."

Claim No. 8 is: "A natural gas gasoline having a density of not less than 87 degrees Be. and a vapor tension not substantially greater than 12 pounds at 100 degrees F."

Claim No. 9 is somewhat similar in claiming a patent on the product: "As a new composition, a liquid such as can be prepared by the herein described process comprising removing from wild natural gas gasoline a vaporous fraction by means of a rectification treatment so conducted that not more than one hydrocarbon occurs in substantial quantity in both the fraction removed and the residue."

In other words, the inventor claims a patent on any natural gasoline which is sharply cut between butane and propane fractions with only the pentane and a large portion of the butane included.

Expect Patent Battle

General opinion among manufacturers of natural gasoline at the convention after the statement by Mr. Rafferty today was that the next few years will see a spirited series of legal battles over stabilizers. It is known that aside from the Holmes stabilizer there are many other manufacturers who are installing apparatus of their own design calculated to denude natural gasoline of dissolved gases without excessive weathering losses. A general description of some of these stabilizers was given in a recent issue of NATIONAL PETROLEUM NEWS.

The Carbide company is now offering the process to any company which desires a license. The Tidal Refining Co. is equipping its plants, both compression and absorption, as rapidly as apparatus can be built and put in place. It is understood that under the Tidal contract it has an option by means of which it can add stabilizers to all of its plants before work can be begun on other installations.

The Carbide company does not sell its apparatus. The equipment remains the property of the patentee and it receives a royalty on each gallon of gasoline produced. The royalty is based on

the increased yield of gasoline obtained by use of the stabilizer.

Licensees are not permitted to examine the interior of the rectifying column. They are not supposed to know what is on the inside. If anything goes wrong the Carbide company will send a man to make repairs.

Bubble Tower Application

General belief among manufacturers of natural gasoline is that the rectifying column is a carefully designed bubble tower, possibly in advance of anything which has been developed to date in straight run refinery practice.

Following presentation of the Bayer paper, which is reproduced in another part of this issue several manufacturers expressed belief that the stabilizer is the most important development since the advent of the oil absorption process. It was stated that the stabilizer has proved that there is still room for great improvement in manufacturing methods and that this is not the time for the industry to sit down and be contented with the tremendous strides it has made in the past.

G. G. Oberfell of the Hope Engineering & Supply Co., expressed belief, in the course of the discussion, that natural gasoline plants can increase their production by 20 to 25 per cent by taking more butane out of the gas. He said that the stabilizer has shown that 50 to 60 per cent of butane can be crowded into the finished gasoline without injuring its qualities.

It was brought out that in most wet gas in the Mid-Continent there is 1½ to 2 times as much butane content as there is pentane and heavier elements.

Low end points shown on various tests of stabilized gasoline at the Tidal-western plants at Burkburnett were not attributed to the stabilizer by Mr. Bayer in his informal remarks following presentation of his paper. The plants produced low end point goods prior to application of the stabilizer, he said, due to the peculiar characteristics of the gas treated. The stabilizer has reduced the end point approximately 5 degrees, because of the larger percentage of butane included in the finished material.

When originally installed it was the thought of Tidal engineers that the stabilizer would reduce vapor tension appreciably. Practice has shown, however, that for a given recovery the product has only a few pounds less vapor tension. Compared gravity for gravity, the vapor tension is much less. The average stabilized product has a gravity above 90 Be.

WOVEN into the broad blanket which forms the patent structure of the Patent Club are some threads representing patents on bubble tower development which has been accomplished by The Texas Co.

W. K. Holmes of this company has developed a stabilizer of his own which he proposes to license to the industry. Probably it includes some adaptation of the bubble tower. If so, will The Texas Co. or the Patent Club come forward and claim priority over the Carbon & Carbide gasoline stabilizing patents by reason of owning patents on the bubble tower itself?

It looks as if the patent warfare that will center about processes for stabilizing natural gasoline may be second only to the scrap over cracking process patents.

The Patent Club's patent blanket is wide but is it wide enough to cover the natural gasoline industry as well as the cracking field?—P. T.

Savings Effected By Use Of Stabilizer In Natural Gasoline Plants

By Lloyd F. Bayer
Manufacturing Manager, Tidal Refining Co.,Tulsa

Delivered At Convention Association Of Natural Gasoline Manufacturers, Tulsa, April 23-24

THE information used in presenting this paper on the stabilizer is obtained from our experience in operating an installation at each of the two Burkburnett plants of the Tidal-Western Oil Corp. The columns were built and erected by the Carbide & Carbon Chemicals Corp. under whose patents they are licensed.

The first stabilizer was put in operation about the middle of January and the second during the early part of February, 1924. The plants at which they are applied are both of the compression type, operating on the rich casinghead gas which is generally produced in the Burkburnett field.

A refinery is operated by the Tidal-Western Oil Corp. in conjunction with the gasoline plants, at which low gravity gasoline is cut from the crude to meet the desired distillation specifications as regards the 50 per cent, 90 per cent and end points.

This gasoline, deficient in its proportion of light fractions, is used at the gasoline plants as a blending material for the natural gasoline, which adds the desirable lighter fractions, producing an excellent motor gasoline.

Extractions Unusually Good

As the plant operates on rich gas, the initial extraction before weathering was unusually good and due to the blending material it was possible to hold a maximum percentage of the original initial production. Due to these two advantages, the efficiency of extraction was unusually high for a compression plant. A consideration of these points is essential in evaluating the results obtained by the operation of the stabilizers.

Although the apparatus was described in J. A. Rafferty's paper at the convention a year ago, and has since been described elsewhere, I believe, that a brief review of the important points would not be amiss. The stabilizer is essentially a rectifying column in connection with a still or kettle operating at relatively low temperatures. It is an adjunct to a natural gasoline plant, not a means of extracting gasoline from natural gas, and is applicable to any type of plant whether it be compression, oil absorption, charcoal, or any combination of these processes.

Its function is to handle the condensates currently as made in the various plant cycles and to separate from these condensates all the gaseous constituents and to leave remaining in the finished product all the liquid fractions which may be desired.

The various condensates as produced are continuously expanded directly into the column at appropriate points. The highest gravity, most volatile fraction is admitted nearest the top and that most nearly approaching the quality desired in the final product is introduced nearest the bottom of the column. As the liquids are carried under the pressure at which they are produced up to the expansion valve on the column, there is a very appreciable refrigerating

effect due to the evaporation of the lighter fractions.

This refrigerating effect is, of course, most noticeable at the top of the column where the lightest fractions are admitted. The column is equipped with trays and means are provided for the downward flow of liquid and the upward flow of vapors. Of the condensates admitted to the column, such portions as remain liquid, pass from the bottom of the column through a "U" trap into the kettle.

Kettle Construction

This latter is usually a horizontal storage tank which has been modified to suit the need by being equipped with a steam coil and a vapor pipe to conduct the vapor evolved in the kettle into the base of the column. Means are provided for maintaining in the kettle a constant temperature at any desired point and for maintaining a constant pressure on the kettle and column.

A temperature gradient is thus maintained between the base of the column, which is kept warm by the vapors entering through the kettle, and the top of the column which is kept cold by the refrigerating effect produced by the expansion of the light liquids. The base of the column is maintained at a sufficiently high temperature by the warm vapors that liquids descending in the column are freed of all gaseous constituents.

The top of the column is maintained by the refrigeration at a temperature sufficiently low, that the wild vapors leaving contain no true gasoline constituents, all such having been condensed out by contact with the cold liquid. A part or all of the vapors leaving the top of the column are recompresed and the condensate thus produced is admitted to the top of the column to augment the volume of cold liquid wash.

As the stabilizer is not a means of producing gasoline, it is dependent for its maximum efficiency upon the initial extraction of the gasoline plant at which it is installed. It may, therefore, be necessary to take steps to improve the extraction at some plants if the maximum production from the gas is to be obtained. In a compression plant where the machinery is capable of it, this may be done by increasing the pressures or by improving the cooling conditions.

Increasing Gasoline Extraction

In an absorption plant, the increased initial extraction may be obtained by one or a combination of the following changes, to wit; increasing the gas pressure, increasing the rate of oil circulation, or decreasing the oil temperature. Every individual problem will have to be studied separately. Where a charcoal test of the total residue leaving the plant shows no appreciable gasoline content, it will probably be unnecessary to make any changes in the plant operation when the stabilizer is installed.

While the description of the apparatus makes it appear complicated, the actual operation is simplicity itself. Admission of the liquid to the towers is controlled by motor valves actuated by air or gas pressure from regulating floats placed on the accumulator tanks. The pressure on the system is controlled by a suitable check regulator on the outlet pipe from the tower and the temperature on the kettle is controlled by a thermostat. All other conditions remaining unchanged, the quality of the product collected in the kettle may be varied merely by adjusting the temperature regulator on the kettle and allowing the system to establish equilibrium under these conditions.

For a product of any given distillation recovery, the stabilizer will permit the saving of more gasoline from any plant than is possible by ordinary weathering methods even of the more efficient types. It should be borne in mind in operating the stabilizer that if the kettle temperature is raised to produce gasoline of lower gravity or higher distillation recovery, a decrease of yield must be expected.

Can Regulate Kettle Temperature

Conversely, if conditions permit the production of higher gravity, lower distillation recovery product, the temperature of the kettle may be lowered to attain this result and an increase in yield may be expected.

Even though a gasoline is produced of relatively low distillation recovery, that is from 75 to 80 per cent, the product is still stable and will contain no propane or other gaseous constituents The change in gravity and distillation recovery of the stabilized product by lowering or raising the kettle temperature is entirely due to including a greater or less percentage of butane.

A brief inspection of the characteristics of the individual constituents usually found in natural gasoline may be of interest at this point. Methane and ethane have such low boiling points that they are ordinarily present in gasoline only in very minute quantities. Propane boils under atmospheric pressure at a temperature of minus 47° F. Varying with the type of plant and the quality of the gas handled, propane is ordinarily included in natural gasoline even when weathered for shipment to an amount of 1 to 4 or 5 per cent.

Natural gasoline containing 2½ or 3 per cent of propane is not at all unusual. It is not difficult to see why ordinary gasoline boils when it contains 2 or 3 per cent of a compound which has a boiling point of minus 47° F. The unfortunate part of it is that although propane will boil when alone at this low temperature, it can be freed from natural gasoline only by exposing to such high temperatures that very large proportions of the valuable constituents are also carried off.

Losses Too Great

Ordinary weathering process cannot, therefore, free natural gasoline of propane without such abnormal loss as to be commercially impracticable. Butane, the next higher in the series, boils at 32 F. and may be combined in a natural gasoline in relatively high percentages without abnormal losses in handling.

As pentane, the next higher in the series, boils at 97° F., there is no question as to the desirability of including all of it and the heavier compounds of the series which may be present in the natural gas being treated. By elimintating the propane, amounting to 2 or 3 per cent, it is possible to add a very much larger percentage of butane and still maintain the same distillation recovery on the finished product. The gravity of the product will, of course, be higher for any given distillation recovery, when the stabilizer is used, due to the greater percentage of butane included.

Although the distillation recovery is an excellent relative method to determine the volatility of natural gasoline, it must be borne in mind that the losses involved in the distillation test are so far in excess of those involved in the normal handling of natural gasoline as not to be comparable. This is particularly noticeable in stabilized gasoline. As butane boils at 32°, there is a very considerable proportion of the butane content which is not recondensed in the fractional distillation test, the condenser of which is maintained at a temperature of 32 to 34° F.

Due to the complete freedom from dissolved gas, stabilized gasoline even of low distillation recovery may be

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Natural gasoline manufacturers generally believe that the Stabilizing Process is the greatest contribution to the manufacture of gasoline from natural gas since development of the oil absorption process. At the convention of natural manufacturers April 23 and 24, the subject of stabilization and fractionation bobbed up in nearly every session in one form or another.

While the stabilizer was described at the convention a year ago, the accompanying paper by Mr. Bayer is the first detailed account of results obtained by a licensee by using the process on a large commercial scale. The Tidal is equipping all of its plants with stabilizers as rapidly as possible as a result of its experience.

Extensive experimentation is in progress on stabilization by various manufacturers and other patents are being sought. It now appears that considerable patent litigation is in prospect. The Carbide & Carbon Chemicals Corp. served notice at the convention, as explained elsewhere in this issue, that it would seek to protect its discovery.—Editor.

General View of Tidal Western Gasoline Plant No. 2 at Burkburnett, Texas, where stabilizer has recently been installed. Rectifying column is in place within scaffolding at left of photograph.

handled or blended with very low losses. When combined even in high percentages in motor fuel, the stabilized gasoline is retained in the motor fuel much more satisfactorily than ordinary natural gasoline of equal distillation recovery. This is indicated both by distillation tests and weathering tests on the blended fuel.

Flexibility of Control

In addition to the simplicity of the apparatus and the ease with which the stabilizer is operated, the flexibility of control is worthy of note. As indicated above, the quality of product may be varied by adjusting the temperature regulator on the kettle. It should be understood in this connection that at any one time the stabilizer produces one and only one quality of finished product. Thus the temperature control could be adjusted so that the distillation recovery of the finished product would be 85 per cent.

While so adjusted, only that one product is obtainable from the system, which is somewhat different from the usual gasoline plant operation. Ordinarily two or three products are being made simultaneously in a gasoline plant and these may be combined if so desired in various proportions to make products of varying specification. With a stabilizer, operation must be continued under one set of conditions until the requisite amount of gasoline of corresponding specifications has been produced, after which the temperature may be varied to produce gasoline of different specification. Thus, where a plant is called upon for gasoline of several specifications, it will be necessary to carry some stock on hand if immediate shipments are desired.

On the other hand, the stabilizer makes finished gasoline continuously and no tankage is required for weathering or storing unfinished product. The steam consumption is abnormally low. The condensed water from the heating coils at one of the stabilizer was measured which indicated a steam consumption of seven boiler horse power for a plant having a net production of 12,000 gallons per day.

To the gasoline manufacturer the direct advantage of the stabilizer is, of course, the increase in production which may be obtained as compared to ordinary operation when producing gasoline of the same distillation recovery. There is another important advantage less easily measured, but none the less appreciable, in the sales value of the product. The stabilized gasoline will undoubtedly demand a ready sale as soon as it has been generally tried out by refiners.

Makes Better Market

The value to the refiner will be reflected either in somewhat higher prices paid to the gasoline manuafcturer, or in times of distress will allow the gasoline manufacturer making stabilized gasoline to move his product when it is difficult to find a market for ordinary raw. There are other advantages, but these are rather attendant upon the two main ones just outlined and will be discussed in connection with them.

Possibly as striking an indication of the increased production obtainable with the stabilizer is the increased gravity for any given distillation recovery. Where shipments of natural gasoline from Burkburnett over a period before the application of the stabilizer averaged 88.0 gravity for a distillation recovery of 0.6 per cent higher, the gravshipments are averaging 90.7° A. P. I. with a distillation recovery of 82.8 per cent. Thus, for a gasoline with a recovery of 82.2 per cent, the present ity is 2.7° higher.

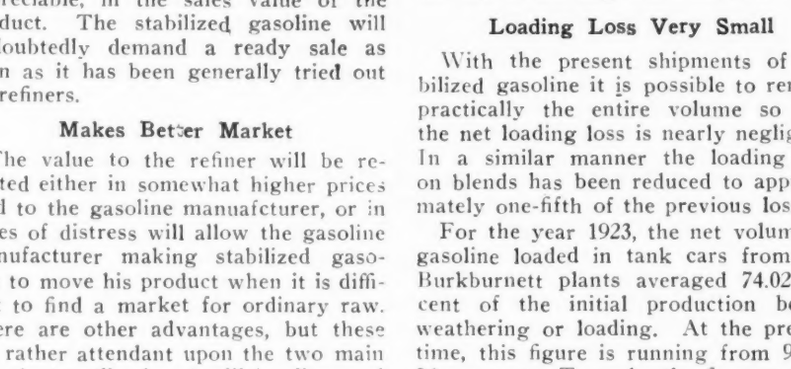
Our experience has generally indicated that for the same distillation recovery, the gasoline will have a gravity approximately 3° higher. As the stabilizer does not remove any of the heavier fractions, but does remove gaseous constituents, substituting butane therefor, increased production is reflected by the increased gravity of the product.

Strange as it may seem, this increased gravity is accompanied by very much decreased handling losses. For the present month on shipments of stabilized gasoline of 82.8 per cent distillation recovery, which is slightly lower than our average shipments of last year, the loading loss was one-sixth of our average for 1923. From the high loading loss on ordinary natural gasoline, it is possible to remake and save approximately one-half the gallonage by the use of loading dome covers.

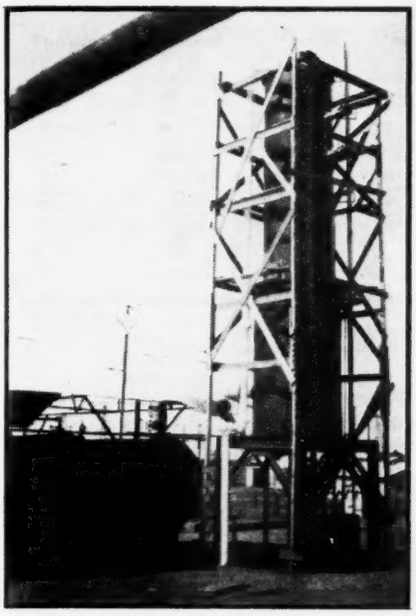
Loading Loss Very Small

With the present shipments of stabilized gasoline it is possible to remake practically the entire volume so that the net loading loss is nearly negligible. In a similar manner the loading loss on blends has been reduced to approximately one-fifth of the previous loss.

For the year 1923, the net volume of gasoline loaded in tank cars from our Burkburnett plants averaged 74.02 per cent of the initial production before weathering or loading. At the present time, this figure is running from 93 to 96 per cent. To make the figures clear, let us assume a given volume of casinghead gas, from which, according to the operation for several months just prior



View of stabilizing kettle at Tidal Western Plant No. 2, Burkburnett, Texas. Control board at left has pressure and temperature recording gauges and thermostat control apparatus.



View of rectifying column which is part of equipment of the stabilizer at Tidal Western Plant No. 2 Burkburnett, Tex. Photograph was taken during construction and before scaffolding was removed. White gas line extending from top of rectifying column at left to the earth shows effect of refrigeration of gas at top of column. The line was painted black but is covered with frost in the picture. Kettle is under shed at left.

to the installation of the stabilizers, we were able to produce initially, before weathering or loading, 100 gallons of gasoline, and from which we were able to ship in tank cars, 74 gallons net.

Under the present stabilizer operation our initial production is slightly decreased, so that we are now making originally at the plant 93 gallons as compared to the 100 gallons initially made on the old basis. As noted above we are now able to ship 93 to 96 per cent of the initial stabilizer production. Taking 93 per cent of 93 gallons, we find that the present shipments are 86.5 gallons in the tank cars as compared to 74 on the old basis.

Thus from the same volume of gas where we were shipping 74 gallons, we are now shipping 86.5, an increase of 17 per cent. This increase is obtained in spite of the fact that the quality of the raw now utilized in blending is much better than that previously used. Where no blending is done or where it is possible to duplicate conditions exactly before and after the introduction of the stabilizer, I believe that increases of 20 to 30 per cent will not be unusual even on efficiently operated plants.

Source of Figures

The figures above apply at our No. 1 plant where conditions more nearly duplicate those existing prior to the installation of the stabilizer. It is unfortunate for the purpose of this paper that our two Burkburnett plants are operated to a considerable extent as one unit, the production from the No. 2 plant being transferred daily to No. 1 for shipping or storage.

Stabilizers are now being constructed which will be installed as soon as ready, at individual plants where these complications do not exist. Three of the new installations will be on absorption plants, two of which are supplied with blending material, the remaining one making raw exclusively. Particularly from the latter should we be able to obtain data which is more readily comparable, as to the exact increase in production due to the stabilizer alone.

The advantage of stabilized gasoline to the refiner are numerous. As pointed out above, such advantages to to the refiner are also of benefit to the natural gasoline manufacturer, whether he is a refiner or blender or merely a producer of raw for sale to refiners. In the cases where the gasoline manufacturer is also a refiner or blender, the advantages that accrue in blending with stabilized gasoline react directly to the benefit of the gasoline manufacturer. Where the stabilized gasoline is sold as raw to a refiner, the refiner's advantage will be reflected in part at least to the natural gasoline manufacturer through increased price or in improved marketing conditions.

Reduction of Blending Losses

The advantage which is first noticed is the reduced loss in handling and blending stabilized gasoline and the decreased loss in handling and storing the finished motor gasoline in which stabilized gasoline has been used. As almost all refiners unload natural gasoline directly into the stock which is to be blended, the same procedure will, of course, be used with stabilized gasoline.

In unloading it in this manner, it is possible to receive in the storage tank containing the blending stock the same gallonage which is pumped out of the car within the reasonable limits of accuracy obtainable in ordinary gauging.

The loss in storing the finished product blended with stabilized gasoline is no greater than the loss in storing gasoline of equivalent specifications made direct from the crude. It is not my intention in any way to discredit the use of natural gasoline in refinery operation as it is so very generally and so uniformly satisfactorily used by the great majority of refiners.

I do wish to point out, however, that stabilized gasoline with its absolute freedom from dissolved gas will give much better results than ordinary natural gasoline. The dissolved gas in ordinary gasoline is still present in the finished motor fuel containing it.

This gas is continuously making an effort to free itself from the gasoline in which it is in solution and in leaving the gasoline carries off in the form of a saturated vapor true liquid constituents of the gasoline. The loss is, therefore, not confined to the volume of gas which escapes but is augmented by the volume of heavy vapors which the gas carries with it.

No Dissolved Gas

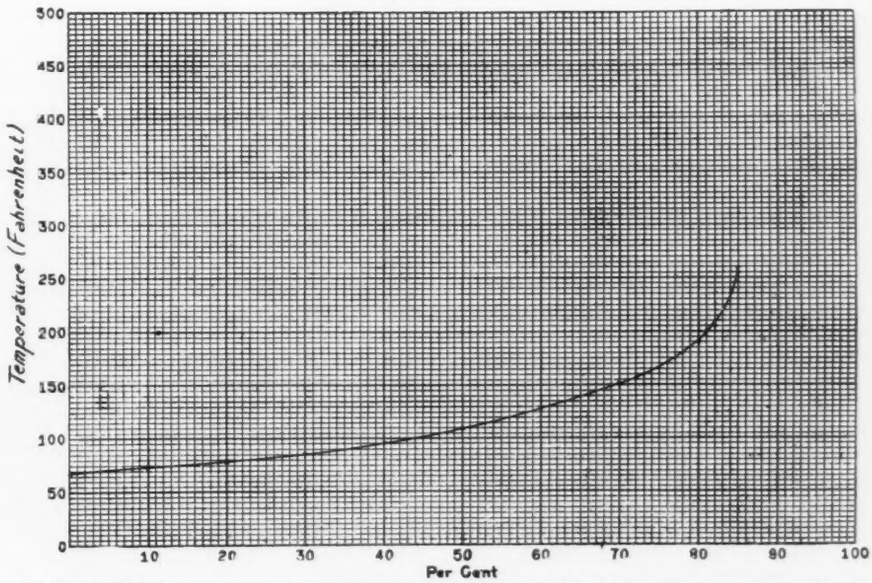
In stabilized gasoline no dissolved gas is present and, therefore none can exist in the finished gasolines made therefrom. Losses are therefore minimized, being due only to the evaporation of true liquid constituents.

The freedom from gas and the stability of the lighter fractions of stabilized gasoline can probably be most conclusively shown by a series of tests, of which several examples will be given.

A sample of stabilized gasoline is heated over a water bath or similar device to drive off the lighter fractions which are absorbed in blending material.

In all such tests we have found that the total of the net volume of gasoline remaining in the flask and the net increase in the blending material is 99

Distillation Chart



Typical distillation curve of stabilized gasoline. Note that the curve has characteristics similar to a Benzol curve being very flat until 50 to 60 per cent of the gasoline is distilled off.

per cent or more of the original volume of stabilized gasoline. In most cases approximately 50 per cent or more has been evaporated and yet this amount has been recondensed and the total loss in the operation has been less than 1 per cent and in many case is not measurable.

Thus a stabilized gasoline of 90.6 gravity and 80 per cent recovery was heated to drive off 56.5 per cent which was recondensed in 54.1 gravity naptha. The volume of naptha was such that the light portions of the stabilized gasoline blending with it made a finished gasoline containing 14.3 per cent of the light fractions of the stabilized raw and 85.7 per cent of the naptha. The finished gasoline had a gravity of 59.3 and a recovery of 96.0 per cent, meeting Navy specifications throughout with the exception of being a little high at the 50 per cent point.

A more careful selection of the original naptha would have permitted meeting this point as well. It is important to note that not only is there a loss of but 0.7 per cent in this test, but that the finished gasoline so produced has a very satisfactory distillation recovery, even though it contains only the light fractions of the stabilized gasoline, which would not be the practice commercially.

The distillation tests on the various products are shown below:

	Stabilized Gasoline	Naphtha*	Blend**	Stabilized† Residue
Gravity	90.6	54.1	59.3	77.5
IBP	60	168	112	95
10%	70	222	154	113
20	79	248	208	120
30	89	265	247	128
40	99	282	252	136
50	114	300	292	145
60	136	318	312	156
70	166	335	330	160
80	206	355	352	186
90	...	381	386	213
E.P	240	440	434	288
Rec	80.0%	98.5%	96.0%	98.0%

*—Used as blending stock.
**—Contains 85.7% of naphtha and 14.4% of the light fraction of the stabilized gasoline amounting to 56.5% of the original stabilized gasoline.
†—Amounts to 42.8% of the original stabilized gasoline remaining after heating.

In another test a blending stock was used which was less deficient in light ends that the one noted above, so that the finished gasoline produced was far superior to Navy specifications at every point. In this case also the loss was less than one per cent (0.8 per cent to be exact). For comparison, another column is included showing a blend containing the same amount of naptha but using the entire stabilized gasoline in place of only the light fractions. As might be expected, this blend containing as it does all of the stabilized gasoline, has a somewhat higher initial boiling point and a distillation recovery 1 per cent better. However, the one containing the light fraction alone is a very satisfactory gasoline and is in no way too volatile for ordinary use. The tests are shown at top of next column.

At the risk of repetition I wish to point out that this is not intended as a commercial application but is merely used to indicate the stability of even

	Stabilized Gasoline	Naphtha*	Blend**	Stabilized Residue †	Blend‡
Gravity	93.2	54.8	60.4	82.2	59.3
IBP	63	118	88	86	99
10%	66	194	128	96	143
20	73	215	179	104	183
30	81	235	220	112	215
40	91	256	245	120	242
50	101	273	268	130	264
60	116	290	289	140	286
70	138	313	315	151	310
80	185	336	345	169	338
90	...	370	388	192	376
E. P	266	435	435	289	437
Rec	85.5	98.0	96.0	98.5	97.0

*—Used as blending stock.
**—Contains 84.6% of naphtha and 15.4% of the light fraction of the stabilized gasoline amounting to 51.5% of the original stabilized gasoline.
†—Amounts to 47.7% of the original product remaining after heating.
‡—Contains 85% of naphtha and 15% of original stabilized product before heating.

the most volatile fractions contained in stabilized gasoline.

The portion driven off is largely butane with only small amounts of heavier fractions and as this can be blended with no appreciable loss to form a satisfactory motor fuel, it is to my mind conclusive proof of the way stabilized gasoline may be held in a finished motor fuel.

Higher Recoveries

The freedom from dissolved gases results in higher distillation recoveries being obtained on the finished blend when stabilized gasoline is used, as compared to ordinary gasoline of the same distillation recovery. This increase is usually at least 1 per cent and frequently 2 per cent; that is where 95 per cent recovery would have been obtained on a blend with ordinary raw, 96 or 97 per cent will be obtained with stabilized gasoline of the same distillation recovery.

This may be expressed in another way, by saying that the same distillation recovery on the finished blend may be obtained by using stabilized raw of considerably lower distillation recovery than is possible with the same percentage of ordinary raw gasoline. Tabulated below are some tests indicating that blend containing 25 per cent of 85 per cent recovery ordinary raw had a distillation recovery of 96 per cent, whereas a similar blend made of 25 per cent of 85 per cent recovery stabilized raw had a distillation recovery of 97 per cent. A blend containing 25 per cent of only 78 per cent recovery stabilized raw had a distillation recovery of 96 per cent or equal to that made with ordinary raw of 85 per cent recovery. It should be noted that, in addition, the stabilized raw had higher gravities and for the same percentage in the blend resulted in higher gravity blends. This brings out another point that for given gravity requirements or for specifications on the early point of the distillation, a less volume of stabilized raw may be used to obtain the equivalent result.

The tests are tabulated below:

Ordinary Gasoline No.1	Stabilized* Gasoline No.2	Stabilized** Gasoline No.3	Naphtha†	Blend†† No. 1	Blend‡ No. 2	Blend ‡‡ No. 3
Gr. 88.8	91.5	94.1	53.1	60.5	61.0	61.2
IBP. 70	67	60	172	92	96	95
10% 78	73	70	230	136	132	135
20 86	79	80	251	181	172	180
30 96	85	93	270	221	213	224
40 109	96	111	287	254	246	255
50 122	110	135	304	281	276	283
60 140	128	149	322	305	301	306
70 167	151	176	341	328	325	330
80 207	191	...	362	356	351	356
90 ...	...	...	387	392	387	392
EP 260	260	260	441	437	436	436
Rec. 84.5	85.0	78.0	98.5	96.0	97.0	96.0

*Of equal distillation recovery ot ordinary gasoline No. 1.
**—Of lower distillation recovery than ordinary gasoline No. 1.
†Used in blending.
††—Contains 25 per cent of ordinary gasoline No. 1.
‡—Contains 25 per cent of stabilized gasoline No. 2.
‡‡—Contains 25 per cent of stabilized gasoline No. 3.

Below are tabulated some comparable distillation tests using 10, 15, 20 and 25 per cent of a stabilized raw of 83.5 per cent recovery with 53.1 gravity naptha. These tests indicate that this low gravity naptha can be made up to meet Navy specifications with 20 per cent stabilized raw, to meet all the distillation points and having a recovery of 97.5 per cent. With 25% of stabilized raw, a gasoline superior to Navy specifications is produced having a gravity of 61.0 and a distillation recovery of 97 per cent. The tests are as follows:

	Stabilized Gasoline	Naphtha	Blends containing various percentages of Stabilized Gasoline			
			10%	15%	20%	25%
Gr	91.5	53.1	56.2	57.4	58.7	61.0
IBP	56	170	120	115	110	102
10%	68	230	190	171	162	140
20	76	255	229	216	200	185
30	85	271	256	248	236	224
40	97	286	274	270	263	254
50	112	300	293	289	284	278
60	134	316	311	307	304	299
70	162	331	328	325	324	319
80	222	352	352	349	348	346
90	...	381	384	382	382	376
E.P	286	440	440	436	435	433
Rec	83.5	98.5	98.0	98.0	97.5	97.0

To indicate what may be done with stabilized raw even of low distillation recovery, I am showing below results of two blending tests in which stabilized gasoline of 74.0 and 75.5 recovery were used to make 58/60 Navy gasoline out of 53 gravity naptha. You will note that even with 17 and 20 per cent respectively of this high gravity, low recovery stabilized gasoline that it is possible to make a finished Navy meeting all distillation points and having a distillation recovery of 97.5. The tests are as follows:

	Stabilized Gasoline	Naphtha	Finished Gasoline
Percentage Used	17.0%	83.0%	100%
Gravity	92.4	53.3	59.1
I.B.P.	60	165	95
20%	84	253	205
50%	156	296	283
90%	...	383	386
End Point	250	439	434
Recovery	74.0	98.5	97.5
Percentage Used	20%	80%	100%
Gravity	93.8	53.0	59.9
I.B.P.	60	218	108
20%	76	260	209
50%	113	294	278
90%	...	376	371
End Point	250	430	423
Recovery	75.5	98.5	97.5

This higher distillation recovery possible with the use of stabilized raw is very important to the efficient refiner making navy gasoline. The refiner using tower equipment that permits of close fractionation, usually finds that the 90 per cent point rather than the end point is the controlling factor in determining the amount of heavy ends that may be included in his Navy gasoline.

Where the refiner uses ordinary natural gasoline that would produce a distillation recovery of 95 per cent on the finished blend, there is 5 per cent remaining to boil off between the 90 per cent and the end point.

Where stabilized raw is used and a distillation recovery of 97 or 98 per cent results, there remains 7 or 8 per cent to boil off between the 90 per cent point and the end point. Hence, within the limits of the end point, more heavy fractions may be included in the latter case and still meet the 90 per cent requirement. This is an appreciable advantage in increasing the total yield from the crude of material entering into navy gasoline.

Although not measurable until the end of the test, the distillation loss actually occurs almost entirely at the beginning, so that if the distillation loss is reduced, the percentages at given temperatures in the early part of the distillation, say 212 or 221°F., are increased proportionately.

This is of interest to the refiner who may have specifications of his own as to minimum percentages derisable at 212°F. It has been found in extensive motor tests that the starting and acceleration characteristics are closely related to the percentage distilling at 212°F. The horse power developed or the mileage from any given car is also related to this figure.

A number of refiners, who watch this point particularly, insist upon having a natural gasoline which will be retained to the maximum extent in the finished blend. They are interested not only in putting in a certain percentage of natural gasoline but in seeing that it stays there and may be accounted for in the increased percentages distilling at 212°F. Stabilized gasoline meets this requirement admirably.

As shown above, it is possible to use considerably greater percentages of stabilized gasoline than has been the case with ordinary gasoline. This permits the use of lower gravity blending stock as a basis for the finished motor fuel. Not only may somewhat heavier ends be included in the blending stock but it is usually possible to take out a percentage of high gravity, straight run gasoline from the crude for sale as such, or increase such per cent if the refiner is already doing this to a certain extent.

It has been found possible to increase the percentage of high gravity, straight run by 3 or 4 per cent on the crude, eliminating this percentage from the navy blending stock. This increased volume of high gravity straight run amounts to approximatelv 10 per cent of the gasoline produced by the average refiner, and this product usually brings a premium of about 3 cents per gallon above Navy gasoline. In other words, the refiner's realization can thus be raised approximately 12 cents per barrel of crude run.

As has been indicated in this paper, stabilized gasoline can be produced with distillation recoveries varying from 75 per cent to 90 per cent. The corresponding gravities at our Burkburnett plants vary from 94° to 86° A. P. I.

In the rather limited times that the stabilizer has been installed in our plants, these interesting data on its operation and the application of its products have been developed. Primarily, of course, it has been dependent upon the excellent research work and consequent mechanical design of the Carbide & Carbon Chemicals Corp.

I do not wish to leave the impression that all possible applications of the stabilizer have been exhausted, for I believe there are a number of profitable channels yet to be investigated. However, the basic principle involved in freeing natural gasoline from all gaseous constituents and including any desired percentage of butane, is of the utmost importance and in all probability the only principle under which maximum yields may be obtained.

CHICAGO, April 28.—Formal announcement is being made by the Universal Oil Products Co., owners of the Dubbs cracking process, of a change of address for the home office. General offices which used to be on LaSalle street have moved to 312 South Michigan Ave., Chicago. That address is the Straus Building, called the finest office building in the west. The new telephone number is Harrison-3926. The firm will be in temporary quarters until its permanent space in the building is ready, but the address will remain the same.

Hearing On Pipe Line Tax Complaint

Staff Special

TULSA, April 26.—Hearing of the long-deferred complaint of the Derby Oil Co. atacking the collection of federal transportation taxes on oil in private pipe lines during the war, was held this week in the U. S. district court of the Kansas district before Judge J. C. Pollock.

The case involves hundreds of thousands of dollars in taxes collected by the government between 1918 and 1921. It is the contention of the oil companies that the revenue law of 1918 intended only to lay an 8 per cent tax on oil carried in pipe lines for hire. The government has contended that it had the right to fix a reasonable charge for oil moved by a company in its own private lines, even from field to storage.

Harry H. Smith, secretary of the Mid-Continent Oil & Gas Association, urges that oil companies having paid out taxes under the law under protest, file claims for reimbursement now so that their rights may be protected when an opinion is handed down by the court. The Derby case has been pending for over a year and a half. It was conducted by Judge. J. H. Brennan of the Barnsdall Oil Corp.

Gasoline Accumulating In California

SAN FRANCISCO, April 28.—There were 41 refineries operating in California during March, according to reports received by the U. S. Bureau of Mines. These plants have an aggregate daily indicated capacity of 577,670 barrels of crude, and were operating at 69.2 per cent of their aggregate capacity, running to stills a daily average of 399,704 barrels of crude oil.

Gasoline production in March amounted to 112,234,823 gallons, making an increase of 6,148,418 gallons over February output. Stocks at the end of the month amounted to 246,170,979 gallons, which is a gain of 22,073,675 gallons over Feb. 29 and a gain of 44,889,092 gallons over stocks on hand Jan. 31.

Kerosene output totalled 20,517,092 gallons in March, which is a decrease of 2,470,857 gallons over February. Stocks on hand March 31 were 40,980,773 gallons, which is an increase of 8,628,024 gallons over Feb. 29.

Production of gas and fuel oils amounted to 360,885,096 gallons in March, showing a gain of 25,530,352 gallons over February. Stocks increased 27,515,953 gallons, making the total on hand March 31, 709,364,922 gallons.

Lubricant production was 9,513,185 gallons in March, making an increase of 672,048 gallons over the previous month.

Field Men Exchange Operating Ideas At Natural Gasoline Meeting

By J. C. Chatfield

STAFF REPRESENTATIVE

TULSA, April 24.

FINANCIAL and moral support of the Association of Natural Gasoline Manufacturers to the proposed compaign of enlightening the general public on facts concerning the oil business was pledged by the organization at its third annual convention which closed here today. Resolutions announcing the policy were adopted unanimously after being presented by D. E. Buchanan, the president, in his annual address.

With more than 300 registrations, the third annual convention of the natural gasoline manufacturers was the most successful in the history of the association. Intense interest was manifested in all of the discussions and the Elks' hall was crowded to capacity at all sessions.

A new departure in oil industry conventions was inaugurated at the annual meeting this year when manufacturers brought many of their plant operators in from the field and turned over one session of the meeting to them for discussion of field problems and the presentation of operating methods devised by the men themselves. This group meeting was led by A. H. Ballard of the Twin State Oil Co.

As a result of the successful session at which a number of time and money-saving plant ideas were brought out, the association is considering a series of field meetings among plant employees to be conducted under the auspices of the association during the coming year. The convention voted to have a similar plant session at the fall gathering this year.

Convention Accomplishments

Outstanding ideas developed at the convention were:

1. That the natural gasoline industry will improve its manufacturing practice by fractionation and increase the percentage of gasoline recovered from gas, producing a uniform product with less distillation and handling losses.

2. That closer co-operation between gas producer and gasoline manufacturer is needed to avoid controversies and make their relationship more mutually profitable.

3. That the natural gasoline branch of the industry should join a general campaign of public education although it does not come in direct contact with the public in marketing its wares.

D. E. Buchanan, vice president of the Chestnut & Smith Corp., Tulsa, was re-elected president by the association. F. L. Chase, operating manager of the Lone Star Gas Co., Dallas, was re-elected vice president, and A. M. Ballard, manager of the natural gasoline division of the Twin State Oil Co., was named as vice president. Terms of office of A. V. Bourque, secretary, and O. W. Crick, treasurer, have not expired. These two officers are elected by the executive committee.

The resolutions pledging support of the association to a campaign of truth about oil were presented by President Buchanan at the close of his annual address in which he devoted most of his attention to the subject of political attacks on the industry after reviewing accomplishments of the association during the past year. His address follows in part:

Officers and Directors

D. E. Buchanan, Vice president, Chestnut & Smith Corp., President.
F. L. Chase, Operating Mgr., Lone Star Gas Co., Vice-President.
A. M. Ballard, Manager natural gasoline Dept., Twin State Oil Co., Vice-President.

Directors Re-elected

D. W. Moffitt, Cosden Oil & Gas Co. Tulsa.
E. L. Peck, Empire Gasoline Co., Bartlesville.
H. A. Trower, Phillips Petroleum Co., Bartlesville.
Emby Kaye, Skelly Oil Co., Tulsa.
O. L. Cordell, Waite Phillips Co., Tulsa.
C. W. Mullalley, Arkansas Fuel Co., Shreveport.
J. A. Rafferty, Carbide & Carbon Chemicals Corp., New York.
K. L. Reynolds, Pacific Gasoline Co., Los Angeles.

New Directors Elected

M. E. Mockley, Amerada Petroleum Corp., Tulsa.
John Hall, Oil State Gasoline Co., Tulsa.
G. G. Oberfell, Hope Engineering & Supply Co., Tulsa.
George S. Ratcliff, Texas & Pacific Coal & Oil Co., Thurber, Tex.
W. H. Gray, Tribes Gasoline Co., Tulsa.
E. A. Landreth, Landreth Gasoline Co., Breckinridge Tex.

Holdover Directors

W. M. Welch, Tidal Refining Co.,
R. R. Owens, Marland Refining Co., Ponca City.
Tulsa.
L. C. Ritz, Oklahoma Eastern Oil Co., Tulsa.
H. R. Johnson, Akin Gasoline Co., Tulsa.
A. M. Jones, Amity Gasoline Co., Bartlesville.
A. J. Schlosser, Barnsdall Oil Co., Tulsa.
W. A. Melton Lequefied Petroleum Gas Co., Tulsa.

Wanton Attacks

"I venture to say that every one of you has wondered, as you have read the wanton attacks upon the entire petroleum industry, why some or all of the associations have taken no steps to counteract what you knew to be vicious political propaganda. You know you are honest, you know the petroleum industry is honest, and you cannot understand why it has not raised its hand in its own defense.

"The fact that the industry has done nothing to defend itself before the bar of public opinion is probably responsible for the many attacks that have been made against it.

People are Fair

"The American people, when they know the story of petroleum, will never substitute governmental bureaucracy for the individual incentive which has made the American oil industry the greatest in the world. When they know the facts they will never be content to put this industry, most essential to our national prosperity and safety, in the lap of our political machine.

"Not through selfishness or indifference, but because we had real, vital problems of our own to face, we have been content in the past to confine our association activities to matters concerning only our branch of the industry, but we must face this situation with a broader view.

"We cannot say that because we have no direct contact with the buying public we are not interested in what the public thinks of the industry as a whole. On the contrary, we are vitally interested, for only as the whole petroleum structure stands can we hope to stand, and as it is attacked and torn down, in the same proportion will the natural gasoline industry be destroyed.

"The association has done its work to date and has done it well. Benefits have inured to members and non-members alike. Those outside the association have known that the work would be done and some have been content to reap the benefits without paying their proportionate share of the expense, but, gentlemen, the task before us today is too big to be undertaken by a few. Only through concerted action on the part of every individual and company in the business will the desire and necessary result be obtained.

"This association must not only tell the story of natural gasoline, and the natural gasoline manufacturer, but it muset help tell the whole story of petroleum.

"Your financial and moral support is needed. If you are not a member of this association, join before you leave this meeting and throw the weight of your influence behind this movement.

which I am sure you recognize as a most essential one."

Pat Malloy, receiver for the Constantin Oil Corp., took a somewhat different viewpoint of the political situation in his address of welcome to the manufacturers at the opening session. He asserted that the industry should clean its own house of the few persons who have brought it into ill repute. He stated that the entire industry has nothing to fear before the bar of public opinion.

Charles F. Bevan of the Pacific Gasoline Co., Los Angeles, closed the morning session on the first day with a paper on the future of the natural gasoline industry in California, which included a survey of present conditions. Mr. Chase presided at this session.

The Stabilizer

The paper on the Stabilizer in operation by Lloyd F. Bayer of the Tidal Refining Co., which created extensive discussion is reproduced on another page of this issue. Mr. Bayer was followed by M. P. Youker of the Bartlesville Experiment Station of the Bureau of Mines, who read a paper prepared by D. B. Dow, petroleum engineer, on recovery of still vapors at straight run refineries. Embey Kaye of the Skelly Oil Co. presided at the afternoon session at which these papers were read.

Following the paper by W. K. Holmes, superintendent of the West Tulsa refinery of the Texas Co., which was printed in the April 23 edition of NATIONAL PETROLEUM NEWS, three views of co-operation between producer and natural gasoline manufacturer were presented. W. M. Welch of the Tidal Refining Co. presided.

R. I. Short of the Prairie Oil & Gas Co., presented views of the producer on the subject. It was his belief that the producer should control the gas gathering system up to the point of delivery, the meter. He placed emphasis on the necessity for fair contracts between producer and manufacturer and a spirit of moderation in working out any differences which might arise.

Tests of meters every 30 days so that they may be kept accurate and neither the producer nor manufacturer lose, was suggested by Mr. Short.

Carelessness of employees of both producer and manufacturer in permitting waste of residue gas was stated to be prevalent in some quarters. Mr. Short suggested that efforts be made to impress employees that they must save the gas. Close supervision of vacuum service was asked.

I. P. Parkhurst of the Empire Gasoline Co., presented the viewpoint of the natural gasoline manufacturer on co-operation. He suggested that one cause of friction is the tendency on the part of a few producers to demand a higher price for gas than the manufacturer is paying others or is able to afford. Long term contracts with producers were declared to be essential to enable the manufacturer to assure a supply of gas to operate his properties and protect his investment.

D. E. Buchanan

The serious problem of an adequate supply of residue gas was given special attention by Mr. Parkhurst. He said:

"In a great many fields, the return of an adequate supply of residue gas for lease operation is a very serious problem. Many oil producers expect a return of an unreasonable quantity of residue gas. If this is not available, they retain raw gas for improper purposes. By improper purposes, I mean purposes which cause more loss of revenue than the cost of other fuel.

"The gasoline manufacturer offers the producer a steady market for his casinghead gas, the chief value of which is otherwise wasted. The producer should not, in justice to himself, other producers, or the gasoline manufacturer, expect to retain raw gas for fuel except in emergencies. If the supply of residue gas is inadequate for his lease operations he should provide some fuel other than raw casinghead gas to make up the deficiency of residue gas, for the following reasons:

"The retention of raw gas for fuel, handicaps the operation of a gasoline plant very seriously, and sometimes makes the whole gasoline project unprofitable, thus destroying the market for all casinghead gas on the lease in question, and surrounding leases. In almost all cases, the loss of revenue caused by burning raw gas will much more than offset the cost of other fuel.

Eliminate Waste

"It is only fair to insist that both the gasoline manufacturer and producer eliminate all gas waste and install equipment which will give reasonably good efficiency in the burning of the residue gas. This calls for such items as low-pressure, well-designed burners for boilers, proper gasometers, the elimination of flambeaux and flares, and the testing of fuel lines for leakage.

"Residue gas lines laid by oil producers, are usually laid out for a small number of wells on a lease, at a time when the gas supply is plentiful, and often under considerable pressure. The system usually contains two-inch pipe, which extends from location to location as required without burying to prevent freezing of condensate and without drips to remove liquid which collects at low points. Such a system is often called upon to deliver such quantities of gas that the existing pressure at well-designed, low- pressure absorption plants is not sufficient to overcome the friction existing on the undersized and poorly laid out residue gas system on the lease.

"The oil producer should expect to exercise as much foresight in the layout

and size of his residue system as the gasoline manufacturer is expected to, and does exercise in the installation of his gas gathering system. It is customary for the degree of pressure or vacuum to be held on the wells of the lease, to be under the control of the producer, that is, the producer chooses the degree of pressure of vacuum desired and the manufacturer furnishes suitable regulators for this purpose.

"The operation and adjustment of the regulators should be entirely in the hands of the manufacturer who in turn is responsible for the maintenance of the vacuum or pressure desired to the producer. It is very common practice, however, for the lease foremen and pumpers to decide without gages, that the pressure or vacuum is not that specified. Consequently they adjust the one or more regulators on the lease to their liking.

"The inevitable result is that they destroy the balance of vacuum or pressure which was being maintained. The gasoline plant operators are all this time endeavoring to keep the regulators set right. The effect is that the vacuum or pressure is caused to vary a great deal from day to day, and from well to well.

Don't Make Own Regulations

"The only proper procedure is for the lease foreman who thinks that the vacuum or pressure is not as specified, is to leave the regulator alone and notify the gasoline plant superintendent or linewalker of the trouble. These gasoline plant operators are equipped with suitable gages for measuring the vacuum or pressure and understand the operation and adjustment of the regulators. This procedure, if followed out, will prevent a great deal of annoyance and hard feelings and will insure the producer much better service for his operation."

D. B. Dow, petroleum engineer of the Bureau of Mines, took a neutral stand on the question of co-operation advising both producer and maufacturer on points which have often resulted in friction. He said in part:

"The application of vacuum pumping in stimulating the production of wells has been utilized to a large extent in many fields, and very frequently arrangements are made whereby the gasoline manufacturer supplies the vacuum service to the producer. Such an arrangement should be desirable from the standpoint of both parties, since the manufacturer generally obtains a somewhat richer gas, and the producer is not only benefited by increased oil production but also receives gas under sufficient pressure for operating purposes.

"However, it is true that such is not always the case, and in the past many producers have received an erratic service from plants due to inefficiencies and poor operation which has resulted in ill effects upon production. Because of such circumstances many producers have formed a very poor opinion of the gasoline industry and consequently refuse to deal with gasoline men because of their unhappy experiences in the past. Such unfortunate conditions are being overcome as time passes, with the result that less trouble is being experienced now than formerly.

"The gasoline industry has done and is doing a great deal of investigative work on testing methods. It is hoped that satisfactory methods may be established whereby more accurate determinations of the gasoline content may be made on natural gas. The producer and manufacturer both realize that improvements can be made and undoubtedly as time passes many differences in this connection will be cleared up."

Vice President Chase presented a resolution praising the Bureau of Mines for its aid to the natural gasoline industry which was adopted unanimously after Mr. Dow had finished speaking.

The convention closed with a banquet at the Hotel Tulsa at which Mr. Buchanan was toastmaster and Victor Murdock, former chairman of the Federal Trade Commission, was the principal speaker.

Suggest Standards For Working Barrels

Staff Special

TULSA, April 26.—The committee working on standardization of working barrels for the Tulsa Purchasing Agents association has made a report to the association, which, while not final, contains tentative specifications and tolerances which the members believe will bring about the manufacture of uniform and satisfactory barrels when all manufacturers have adopted the standardization program.

The committee states its recommendations are submitted with the idea of securing additional suggestions and criticisms from both manufacturers and consumers of working barrels, and hopes it will receive both, as it feels that it has progressed as far as it can without further ideas from interested persons. The tentative specifications are as follows:

The inside diameter of working barrels shall be as follows: Two-inch, 1⅞ inches; two and one-half inch, 2¼ inches; three inch, 2¾ inches; four inch, 3¾ inches. The tolerances shall be seven-thousandths of an inch plus or minus on all sizes of barrels

The external diameters shall be as follows:

Two-inch barrels, 2⅛ inches; two and one-half inch, 2¾ inches; three-inch, 3¼ inches; four-inch, 4½ inches. Tolerances in external diameters shall be ten-thousandths of an inch, plus or minus, for each size of barrel.

The length of the working barrel shall be determined by the actual net length of the tube itself, not including collars, and the permissible variation shall not exceed one-quarter inch over or under.

Chairman of this committee is G. A. Tompson, of Bartlesville, purchaser for the Empire companies.

Oil Tank Market Is Gaining Strength

By Special Correspondent

PITTSBURGH, April 29.—Though large orders for line pipe are few and far between, the aggregate tonnage of small orders from day to day is sufficient so that the pipe mills generally are maintaining an operating rate from 93 to 95 per cent of capacity.

Activity in the plate market is slightly accelerated. Chicago tank makers have an inquiry from the Standard Oil Co. of Louisiana for 500 tons for tank roofs at Baton Rouge, La. The McCorkle Pipe Line Co.'s inquiry for tanks still is pending, involving 11,000 tons of plates or more. The Buckeye Pipe Line Co., ordered seven or eight tanks from the Petroleum Iron Works Co., requiring 2000 to 2400 tons of plates. One inquiry is current in Pittsburgh for three 55,000-barrel tanks for erection in Texas, requiring about 400 tons. The Standard Oil Co., of New Jersey is in the market for a number of stills. This interest has just awarded 2100 tons for supports for 50 cracking coils to an unnamed fabricator. It, too, has ordered a 30-ton locomotive crane for the Bayonne, N. J., plant from the American Hoist & Derrick Co.

Plates generally are quoted at 2.25 cents to 2.40 cents a pound, Pittsburgh base. Some 2.15 and 2.20-cents quotations also are noted and one or two special lots developed 2.10 cents, base Pittsburgh.

One order from an oil company for tin plate recently noted involved 8000 base boxes, placed at less than $5.50 per base box, 100 pounds, Pittsburgh. It is understood that some stock plate was taken. Shipments start immediately. Several oil companies have issued tentative inquiries for their third quarter supplies but the price for that period has not as yet been announced by the American Sheet & Tin Plate Co., although since the pig tin market again has fallen, it is possible that no advance will be inaugurated at this time and the quotation allowed to remain unchanged.

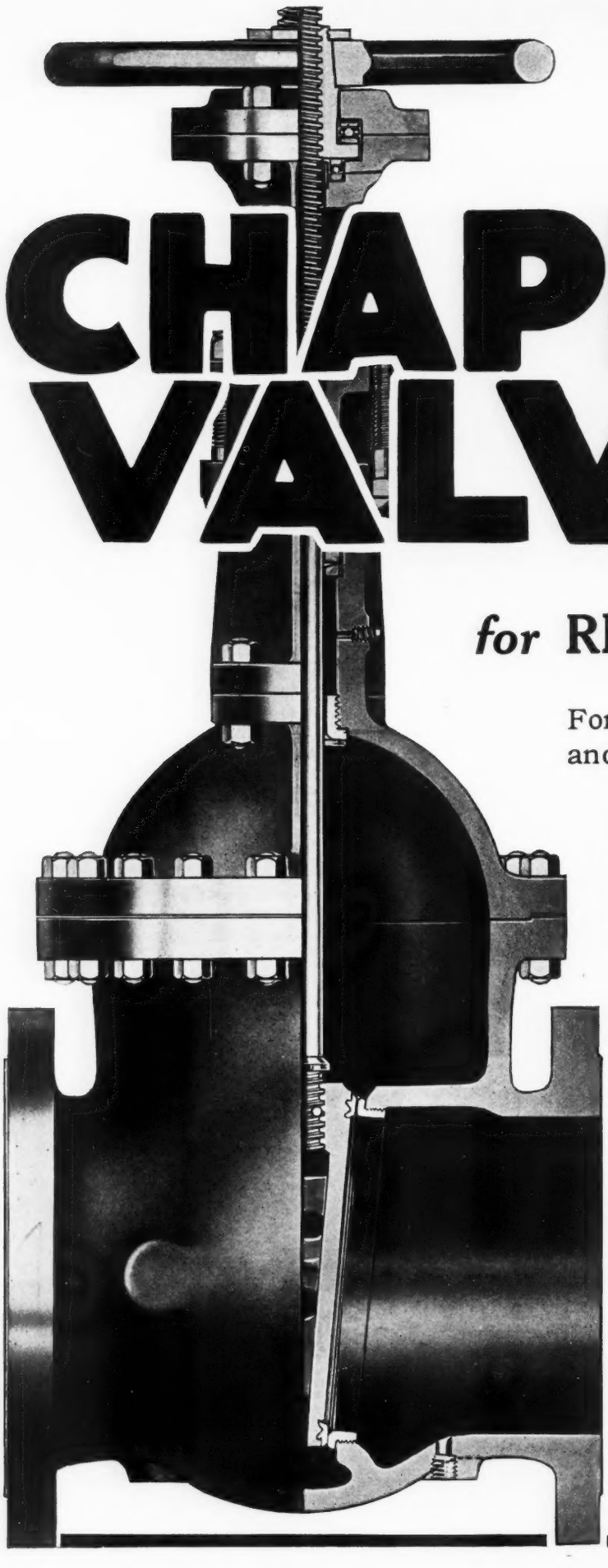
The Birmingham Tank Co., Birmingham, Ala., of which R. I. Ingalls is president, will be enlarged to be the largest tank and plate shop in the south. The plant will specialize in filling station tanks from 500-gallon capacity up and in horizontal cylindrical station storage tanks up to 21,000 gallon capacity. The company will do a field storage tank work business involving the fabrication of the material in the plant and the erection of it in the field.

DODGE CITY, KAN., April 29—L. F. Foland, salesman for the Cities Service Oil Co., says that farmers in his territory have the best prospects within several years for a bumper wheat crop in western Kansas. Business outlook is good here, Mr. Foland says.

Registration At The Gasoline Manufacturers Convention

Name	Company	Address
Hickman, H. B.	Arkansas Fuel Oil Co.	Eastland, Tex.
Atkins, E. L.	Standard Carbon Co.	Monroe, La.
Chase, F. L.	Lone Star Gas Co.	Dallas, Tex.
Crick, O. W.	Highway Oil Ref. Corp.	Tulsa
Smith, A. L.	Victor Gas Co.	Bristow, Okla.
Purdue, Roy	American Refining Co.	Wichita Falls, Tex.
Hayes, Harold R.	Magnolia Pet. Co.	Burkburnett, Tex.
Mathews, S. M.	Victor Gasoline Co.	Bristow, Okla.
Landauer, S.	Eagle-Picher Lead Co.	Henryetta, Okla.
Osborn, W. B.	Natural Gas & Pet. Corp.	El Dorado, Ark.
Anbr, W. J.	Pan Amer. Pet. Co.	120 Broadway, N. Y.
Jones, A. M.	Amity Gasoline Co.	Bartlesville, Okla.
Bevan, Charles F.	Pacific Gasoline Co.	Los Angeles
Bennette, Howard	Western Pet. Ref. Assn.	Tulsa
Davis, H. K.	Western Pet. Ref. Assn.	Tulsa
Jungerman, H.	C. J. Tagliabue Mfg. Co.	Brooklyn, N. Y.
Schluster, W. A.	The Refinery Supply Co.	Tulsa
De Yarmett, W. E.	Chieftain Gasoline Co.	Tulsa
Echols, G. N.	Echols Bros. Radiator Works	Fort Worth
Buchanan, D. E.	Chestnut & Smith Corp.	Tulsa
Story, J. M.	Hesco Gasoline Co.	Tulsa
Andrews, T. C.	Amer. Car & Foundry Co.	St. Louis, Mo.
Dow, G. B.	U. S. Bureau of Mines	Bartlesville, Okla.
McEwan, A. J.	Westcott Valve Co.	Tulsa
Scott, S. R.	Imp. B. of E.	Kansas City
Yonker, M. P.	U. S. Bureau of Mines	Bartlesville, Okla.
Wahl, H. M.	Westcott & Greis	Dallas
Jones, John E.	Marland Ref. Co.	Ponca City
Burke, C. R.	Perry Refining Co.	Tulsa
Rhoades, F. D.	Palmer Corporation	Shreveport
Roberts, J. D.	Lone Star Gas Co.	Gainsville, Tex.
Morgan, R. D.	J. M. Huber, Inc.	Swartz, La.
Schmidt, E. F.	Lone Star Gas Co.	Dallas, Texas
Jarvis, J. R.	Lone Star Gas Co.	Petrolia, Tex.
Coffue, R. C.	Lone Star Gas Co.	Petrolia, Tex.
Martin, H. Arthur	Griscom Russell Co.	Kansas City
Brown, C. L.	Sinclair Oil & Gas Co.	Drumright, Okla.
Aker, V. H.	Sinclair Oil & Gas Co.	Shamrock, Okla.
Kelsey, L. M.	Sinclair Oil & Gas Co.	Drumright, Okla.
Jacobs, Jos. S.	Boatlett	Baltimore
Clevens, R. R.	Marland Ref. Co.	Ponca City
Buddrus, E.	Phillips Pet. Co.	Graham, Tex.
Adams, H. K.	Skelly Oil Co.	Tulsa
Weaver, O.	Barnsdall Oil Co.	Tulsa
Brazier, J. V.	Barnsdall Ref. Co.	Barnsdall, Okla.
Landreth, E. A.	Landreth Gasoline Co.	Breckenridge, Tex.
Huggins, C. B.	Gilliland Oil Co.	Tulsa
Schlosser, A. J.	Barnsdall Oil Co.	Tulsa
Turner, R. D.	Skelly Oil Co.	Tulsa
Schaefer, P.	H. F. Wilcox Oil & Gas Co.	Tulsa
Hurley, J. W.	Hurley Gasoline Co.	Tulsa
Hughes, E. C.	Hurley Gasoline Co.	Breckenridge, Tex.
Yochon, R. C.	Powers & Quinlin	Preston
Coyle, R. M.	Chestnut & Smith Corp.	Ranger, Tex.
Yonker, F. G.	Chestnut & Smith Corp.	Ranger, Tex.
Corbet, W. N.	The Eagle Picher Lead Co.	Henryetta, Okla.
Bigelow, M. A.	Orific Gas Prod. Co.	Tulsa
Koons, R. A.	Barco Gasoline Co.	Tulsa
Strosberg, W. M.	Powers & Quinlan	Preston
Hedrick, Paul S.	Tulsa World	Tulsa
Foster, Dean E.	Dean E. Foster & Co.	Tulsa
Ballard, A. M.	Sun Co. & Twin State Oil Co.	Tulsa
Pearson, R. G.	Warson Pet. Co.	St. Louis
Blankenship, B. E.	Liquefied Pet. Gas Co.	Tulsa
Melton, W. A.	Liquefied Pet. Gas Co.	Tulsa
Baker, Ralph T.	Oil & Gas Journal	Tulsa
Slocum, G. A. R.	Skelly Oil Co.	El Dorado, Kan., Tulsa
Kaye, Emby	Skelly Oil Co.	El Dorado, Kans.
Burford, F. W.	Skelly Oil Co.	Tulsa
Simler, J. B.	The Bruce Macbeth Eng. Co.	Tulsa and Cleveland
Brunner, E.	Hope Eng. & Sup. Co.	Tulsa
Buck, C. P.	Petroleum Engineers	Topeka, Kans.
Seaman, Geo. A.	Braden Co.	Tulsa
Steero, H. A.	Texas Pacific Coal & Oil Co.	Thurber, Tex.
Clark, L. P.	Phillips Pet. Co.	Shidler, Okla.
Gibson, G. K.	Phillips Pet. Co.	Henryetta
Reed, B. L.	Phillips Pet. Co.	Henryetta
Hayden, George A.	Phillips Pet. Co.	Pershing
Lewis, J. O.	Western Machinery Co.	Tulsa
Huber, Fred A.	Western Machinery Co.	Los Angeles, Cal.
Aybazian, Arthur	Skelly Oil Co.	Tulsa
Kinnaird, R. C. Jr.	Skelly Oil Co.	Sapulpa
Boyle, J. H.	Chestnut & Smith Corp.	Tulsa
Francis, C. K.		Tulsa
Yoder, L. A.	Western Supply Co.	Tulsa
Rogers, R. D.	Tidal Refining Co.	Tulsa
Smith, Earl D.	Tidal Chelsea Ref. Co.	Chelsea, Okla.
Beebe, J.	Tidal Ref. Co.	Tulsa
Hitchcroft, D. K.	Chicago Pneumatic Tool Co.	Tulsa
Cavnor, B. P.	Oklahoma Gasoline Plants, Inc.	Oklahoma City
Hunt, A. G.	Chicago Pneumatic Tool Co.	St. Louis
Baldwin	Victor Gasoline Co.	Drumright, Okla.
Hobson, Carl	Victor Gasoline Co.	Drumright, Okla.
Collins, Lum	Victor Gasoline Co.	Drumright, Okla.
Nash, J. L.	Victor Gasoline Co.	Drumright, Okla.
Mentzel, Harry A.	Victor Gasoline Co.	Tulsa
Cooper, A. D.	Tidal Refining Co.	Tulsa
Bayer, Lloyd F.	Tidal Refining Co.	Tulsa
Muir, N. M.	Southwestern Condenser Co.	Tulsa
Leyden, B. B.	Dean E. Foster Co.	Tulsa
Huffine, E. A.	Mid-Continent Pet. Prod. Co.	Tulsa
Curry, D. A.	Mid-Continent Pet. Prod. Co.	Tulsa
Carrick, W. H.	Sinclair Oil & Gas Co.	Tulsa
Yates, W. S.	Sinclair Oil & Gas Co.	Tulsa
Dowd, C. F.	Tidal Ref. Co.	Tulsa
Hall, Jno. M.	Oil State Gas. Co.	Tulsa
Shryock, F. E.		Tulsa
Tucker, A. W.		Tulsa
Miller, J. C.	Lubrite	Tulsa
Wood, A. F.	Chestnut & Smith Corp.	Tulsa
Chatfield, J. C.	National Pet. News	Tulsa
Freese, M. Lloyd	Altitude Pet. Co.	Tulsa
Fritz, Edw. P.	Atlantic Refining Co.	Tulsa
Young, Marshall P.	Roeser-Pendleton Gasoline Co.	Breckenridge, Tex.
Rosier, R. R.	Akin Gasoline Co.	Tulsa
Patterson	Commerce Pet. Co.	Tulsa

Name	Company	Address
McIntyre, E. F.	International Pet. Exposition	Tulsa
Ross, E. H.	Marland Ref. Co.	Ponca City
Brigham, George F.	North American Car Co.	Tulsa
Brigham, Godfrey M.	North American Car Co.	Tulsa
Farmer, Thomas	North American Car Co.	El Dorado, Ark.
Rose, Robert	General Amer. Tank Car Corp.	Tulsa
Sharp, R. J.	General Amer. Tank Car Corp.	Tulsa
Trower, H. A.	Phillips Pet. Co.	Bartlesville, Okla.
Felt, H. E.	American Pet Products Co.	Tulsa
Haggenjos, J.	Johnson Oil Ref. Co.	Tulsa
Ellis, H. G.	Amity Gasoline Co.	Bartlesville, Okla.
McCoy, Lewis J.	Amity Gasoline Co.	Bartlesville, Okla.
Deacon, Wm. T.	St. Louis Surfacer & Paint Co.	St. Louis
Welch, W. M.	Tidal Ref. Co.	Tulsa
Robinson, S. W.	Refiner & Natural Gas. Mfg.	Houston
Shigley, M. I.	United Cent. Oil Corp.	Tulsa
Thompson, F. I.	Westcott & Greis	Tulsa
Smith, G. B.	Westcott & Greis	Tulsa
Ward, R. B.	Hoefler-Shuler Photo Co.	Tulsa
Rohde, W. E.	Keystone Gasoline Co.	Tulsa
Woodson, Morle	Tulsa Tribune	Tulsa
Cummings, Wm. G.		Tulsa
Bliss, T. B.	Wagner Supply Co.	Breckenridge, Tex.
Rowley, Andrew M.	The Oil & Gas Journal	Tulsa
Reistler, C. E. Jr.	Bureau of Mines	Bartlesville, Okla.
Parkhurst, J. P.	Empire Gasoline Co.	Bartlesville, Okla.
Poe, E. H.	Tiger Mtn. Oil Co.	Tulsa
McKay, D. W.	Hope Engineering & Supply Co.	Tulsa
Lyons, H. P.	Hurley-Texas Gas. Co.	Breckenridge, Tex.
Byrnes, J. W.	Phillips Pet. Co.	Shidler, Okla.
Dean, R. R.	Waite Phillips Co.	Tulsa
Oakley, V. R.	Waite Phillips Co.	Tulsa
Boyd, J.	Phillips Pet. Co.	Bartlesville
Welling, E. W.	Polhogt Gasoline Co.	Shamrock, Okla.
Renfro, E. T.	Victor Gasoline Co.	Bristow, Okla.
Shelton, G. P.	Victor Gasoline Co.	Bristow, Okla.
Kerr, T. L.	Phillips Pet. Co.	Bartlesville
Shaner, G. A.	Carter Oil Co.	Tulsa
Johnson, R. M.	Rymery Supply Co.	Tulsa
Wadsworth, J. M.	Pierce Oil Co.	Tulsa
Sexton, L. H.	Phillips Pet. Co.	Bartlesville
Quinlan, H. F.	Chestnut & Smith Corp.	Tulsa
Smith, S. S.	Roxana Pet. Co.	Tulsa
Shunkey, Paul H.	J. T. J. O.	Bartlesville
Bunn, Geo. P.	P. & R. Co.	Bartlesville
Fink, J. B.	Con. Engineer	Tulsa
Fisher, T. E.	Chestnut & Smith Corp.	Tulsa
Terry, Roy W.	Oil State Gasoline Co.	Tulsa
Hintze, Thos. F.		Tulsa
Lane, C. F.	Hurley Gasoline Co.	Tulsa
Vandumur, D. J.	Hurley Gasoline Co.	Tulsa
Blair, John S.	Dean E. Foster & Co.	Tulsa
Peck, E. L.	Empire Gasoline Co.	Bartlesville
Price, E. E.		Tulsa
Hurley, A. E.		Los Angeles
Dunlap, F. B.	Bessemer Gas Engine Co.	Tulsa
Barton, C. R.	Tidal Ref. Co.	Tulsa
Garton, Leo H.	Roxana Pet. Co.	Tulsa
Wood, B. Frank	Invader Oil Corp.	Muskogee
Powers, M. F.	Victor Gasoline Co.	Tulsa
Worley, C. S.	Victor Gasoline Co.	Tulsa
Bisy, H. A.	Tidal Ref. Co.	Drumright, Okla.
Getman, I. H.	Tidal Ref. Co.	Glen Pool, Okla.
Morris, R. L.	Tidal Ref. Co.	Tulsa
Thomas, Jos. J.	Skelly Oil Co.	Tulsa
Hiatt, W. G.	Phillips Pet. Co.	Bartlesville
Smith, T. K.	Chestnut & Smith	Tulsa
Weeker, V. H.	Phillips Pet. Co.	Pawhuska, Okla.
Schellhardt, M. A.	Osage Agency	Pawhuska, Okla.
Campbell, H. R.	Burjuss Gasoline Co.	Nowata, Okla.
Mitchell, R. L.	Twin State Oil Co.	Quay, Okla.
Jones, Wm. R.	Osage Agency	Pawhuska, Okla.
Kluenter, O. F.	American Schaeffer & Budenberg Corp.	Tulsa
Morris, G. I.	American Radiator Co.	
Farrington, J. F.	National Supply Co.	Tulsa
Houston, H. M.	Miller Improved Gas Engine Co.	Springfield, Ohio
O'Connor, J. B.	Miller Improved Gas Engine Co.	Springfield, Ohio
Hendee, Robert W.	Oklahoma Nat. Gas Co.	Tulsa
Patton, Mark S.	Hurley Gasoline Co.	Tulsa
Moore, Dudley W.	Oil Trade Journal	Tulsa
Johnson, A. S.	Sun Co.	Yale, Okla.
Cox, H. C.	Twin State Oil Co.	Yale, Okla.
Arbon, B. J.	Southland Gasoline Co.	Tulsa
Hurley, D. W.	Hurley Gasoline Co.	Tulsa
Fisher, G. R.	C. S. Carpen	Breckenridge, Tex.
Welch, J. H.	Tidal Ref. Co.	Tulsa
Hurket, A. W.	C. F. Brown & Co.	Tulsa
Zink, John S.	Oklahoma Natural Gas Co.	Tulsa
Ford, E. L.	Phillips Pet. Co.	Tulsa
McCollum, E. E.	Phillips Pet. Co.	Tulsa
Droenwaln, A. H.	McCaskey & Wentz	Ponca City
Bowles, Chas. E.		Tulsa
Kaufman, Leo	Southern Chemical Mfg. Co.	Tulsa
Johnson, Carl O.	Marland Refining Co.	Ponca City
Peters, Otto	Chestnut & Smith Corp.	Kiefer, Okla.
Cheek, E. R.	Dewey Portland Cement Co.	Dewey, Okla.
Campbell, A. F.	Fenwick-Reddaway Mfg. Co.	Newark, N. J.
Avery, J. H.	Chestnut & Smith Corp.	Kiefer, Okla.
Farrier, W. H.	Chestnut & Smith Corp.	Kiefer, Okla.
Johannes, J. A.	Phillips Pet. Co.	Bartlesville
McElhatten, T. R.	Rainbow Gasoline Co.	Tulsa
Best, O. J.	Refinery Supply Co.	Tulsa
Willson, C. O.	Oil & Gas Journal	Tulsa
Rafferty, J. A.	Carbide & Carbon Chemical Co.	New York
Lilly, J. B.	Jas. B. Berry's Sons Co.	Tulsa
Elliott, Thos. E.	Diamond Refining Co.	Tulsa
Bush, B. E.	Diamond Refining Co.	Kansas City
Taylor, F. N.	Tiger Mountain Oil Co.	Tulsa
Van Warren, L. A.	Tiger Mountain Oil Co.	Okmulgee, Ok.
Pierce, H. R.	I. T. L. Oil Co.	Bartlesville
Rutherford, T.	Victor Gasoline Co.	Bristow, Okla.
Olansen, Larry	Chestnut & Smith Corp.	Kiefer, Okla.
Ellington, John	Chestnut & Smith Corp.	Kiefer, Okla.
Price, H. V.	Oil State Gasoline Co.	Yale, Okla.
Stepp, Edw. E.	Oil State Gasoline Co.	Yale, Okla.



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Detroit	

Rocky Mountain Jobbers Elect H. L. Schaeffer

By Special Correspondent

LEWISTOWN, MONT., April 24.—The Northwestern Independent Oil Association, an organization of jobbers in the northern Rocky Mountain country, held its second annual meeting here April 21 and 22 for the purpose of electing officers and talking over matters of mutual concern. Convention headquarters was at the Burke Hotel and all meetings convened at the Odd Fellows Hall.

A large percent of those in attendance were jobbers. Of the 48 registrants there were two supply salesmen, both representing the same house, and six refiners representing three refineries. This left 40 jobbers, many of who had traveled a great distance.

H. L. Shaeffer of Helena was elected president at the afternoon session the second day of the meeting, succeeding H. Earl Clack of Havre. C. W. Buntin of Lewistown was chosen vice-president to succeed E. L. De Mers, also of Lewistown. C. H. Brown of Lewistown, who served as secretary-treasurer during the first year of the organization's life, was restored to office. Mr. Brown is identified with the Arro Oil & Refining Co., of Lewistown.

The Lewistown oil men made arrangements for the entertainment of the visitors. Most routine business was disposed of on the forenoon of the first day, when reports of officers and committees were heard and acted upon. After the jobbers had lunched together at the hotel, the meeting reconvened to hear L. V. Nicholas, president of the National Petroleum Marketers' Association, relate the plans and policies of the national jobbers' body. Desire for further information in regard to the Independents' advertising campaign and the coupon clearing house, caused the Montana jobbers to call Mr. Nicholas back to the platform the second day.

A few of the visiting jobbers brought their wives and there was a continual round of entertainment for them, teas, card parties, matinees and motor tours. The annual banquet, followed by a dance took place the first evening at Armory Hall, fostered by the Kiwanis Club.

W. C. Kelley of Butte, Mont., delivered an address on "Advertising."

Petroleum Division, A. C. S. Holds Spring Meeting

Staff Special

WASHINGTON, April 26.—A suggestion that the petroleum division of the American Chemical Society work out some plan by which the division might sponsor a scholarship in chemistry, was made by R. R. Matthews, Roxana Petroleum Corp., St. Louis and chairman of the division at the meeting of the petroleum division here in connection with the spring meeting of the American Chemical Society. The convention ended last night.

Among the papers read before the division probably the one that attracted the most interest was "Catalytic Treatment of Pressure Distillates in the Vapor Phase," by T. T. Gray and Dr. M. R. Mandelbaum. This went into a description of the Gray process for treating pressure distillates with fullers earth in the vapor phase instead of treating them after condensation in the liquid phase.

The paper was read by Dr. Mandelbaum. Considerable experimentation has been carried out with the Gray process at the refineries of the Standard Oil Co. of New Jersey and the Tide Water Oil Co. at Bayonne.

W. A. Peters Jr., of the E. I. Du Pont de Nemours Co., read a paper on "Separation of the Constituents of Petroleum by Fractional Distillation". Dr. Peters gave the results of some of his experiments in the laboratory in the separation of various compounds by means of a bubble tower.

C. E. Waters of the Tide Water Oil Co. read a paper on "The Bichromate Number of Petroleum Oils," dealing with oxidation and gumming tests.

Another paper was "The Viscosity of Oils at High Temperatures", prepared by Dr. Robert E. Wilson of the Standard Oil Co. of Indiana and A. R. Fortsch. The paper was read by Dr. Fortsch, Dr. Wilson, who is usually one of the central figures at meetings of the petroleum division, being absent.

Another paper by Dr. Wilson, and W. H. Bahlke, "A Boiling Point Correction Chart for Normal Liquids With Special Application to Petroleum Products" was read by Dr. Bahlke.

R. B. Moore of the Dorr Co., New York gave a short talk on helium for use in airships instead of hydrogen.

T. A. Boyd of the fuel section of the General Motors Research Corp. read a paper on, "Relative Effects of Some Nitrogen Compounds Upon Detonation In Engines," in which he told some of the facts brought out during the experimental period in the General Motors laboratories while a practical anti-knock compound was being sought for.

TULSA, April 28.—William Kelley, president, and Frederick F. Sharpless, secretary, of the American Institute of Mining & Metallurgical Engineers, are in Tulsa today, as guests of the Mid-Continent section of the institute. They will be taken for a trip of inspection through the Cosden refinery, and also will look over the Vern-Bruner field, just west of Tulsa.

TULSA, April 28. — William M. O'Connor, of Philadelphia, secretary of the Atlantic Refining Co., is in Tulsa today on business for his company. While here he will look over properties of the Gilliland Oil Co., as guest of Col. P. J. Hurley, vice-president and general manager.

Registration At The Gasoline Manufacturers Convention (*Continued*)

Name	Company	Address
Brooks, H. J.	Amity Gasoline Co.	Bristow, Okla.
Legate, M. G.	Amity Gasoline Co.	Bristow, Okla.
Huntington, R. L.	Skelly Oil Co.	Slick, Okla.
Gibson, J. T.	Skelly Oil Co.	Maramec, Okla.
Martin, J. A.	Victor Gasoline Co.	Drumright, Okla.
Wood, Chas.	Victor Gasoline Co.	Drumright, Okla.
Stevens, T. A.	Owen Gasoline Co.	Caney, Kans.
Smyers, W. W.	Chestnut & Smith Corp.	Kiefer, Okla.
Schlosser, A. J.	Barnsdall Oil Co.	Tulsa
Lee, Frank W.	Ingersoll-Rand Co.	Tulsa
Burrell, A. A.	Ingersoll-Rand Co.	Dallas,
Brown, R. H. Jr.	Ingersoll-Rand Co.	Dallas
Hudgins, F. T.	C. & G. Cooper Co.	Tulsa
Mooney, H. N.	Vacuum Oil Co.	New York
Campbell, D. B. Jr.	Tidal Refining Co.	Drumright, Okla.
Titus, John	Victor Gasoline Co.	Drumright, Okla.
McCullah, H. W.	H. F. Wilcox Oil & Gas Co.	Tulsa
Kneeland, L. F.	Sinclair Oil & Gas Co.	Bald Hill, Okla.
Comstock, C. F.	Pure Oil Co.	Tulsa
Boyd, J. L.	Wilcox Oil & Gas Co.	Beggs, Okla.
Holmes, C. A.	Wilcox Oil & Gas Co.	Slick, Okla.
Borthick, L.	Wilcox Oil & Gas Co.	Beggs, Okla.
Jastrow, A. W.	Barnsdall Oil Co.	Avant, Okla.
Swan, F. S.	Victor Gasoline Co.	Bristow, Okla.
Stewart, Wm.	Victor Gasoline Co.	Bristow, Okla.
Embrey, V. N.	Victor Gasoline Co.	Bristow, Okla.
Dun, R. E.	Magneto Ignition Co.	Tulsa
Wyrick, R. S.	Waite Phillips Co.	Okmulgee, Okla.
Whitney, B. A.	Transcontinental Oil Co.	Tulsa
Hapgood, R. T.	Transcontinental Oil Co.	Charleston, W. Va.
Ellington, G. C.	Transcontinental Oil Co.	Tulsa
Scivally, S. R.	Sinclair Refining Co.	Tulsa

Name	Company	Address
Williams, S. M. Jr.	Williams Bros.	Tulsa
Archer, W. J.	Pan Am. Pet. & Transport Co.	New York
Parker, H. O.	Matheson Alkali Works	New York
Sanderson, S. G.	Gypsy Oil Co.	Tulsa
Patton, T. E.	National Gasoline Co.	Shreveport
Setrum, O. M.	National Gasoline Co.	Shreveport
Wyatt, Lloyd M.	Akin Gasoline Co.	Tulsa
Barrett, W. T.	Clendenin Gasoline Co.	Charleston, W. Va.
Browning, R. R.	Clendenin Gasoline Co.	Charleston, W. Va.
Reemney, C. E.	Phillips Petroleum Co.	Bartlesville
Doke, R. C.	Tahlequah Lt. & Power Co.	Tahlequah, Okla.
Sanders, W. S.	Transcontinental Oil Co.	Nowata, Okla.
Varner, Nolan	Transcontinental Oil Co.	Nowata, Okla.
Johnson, H. R.	Akin Gasoline Co.	Tulsa
Converse, L. C.	Abbott-Converse Co.	Tulsa
Crooks, S. B.	Empire Gasoline Co.	Bartlesville
Landreth, W. H.	Landreth Gasoline Co.	Joplin, Mo.
Smith, Harry H.	Mid-Continent Oil & Gas Assn.	Tulsa
Cordell, O. L.	Waite Phillips Co.	Tulsa
Dresser, L. L.	Steel Fabricating Corp.	Michigan City, Ind.
Timmons, J. H.	Oil State Gasoline Co.	Beggs, Okla.
Mockley, M. E.	Amerada Petroleum Corp.	Tulsa
Granger, G. G.		Tulsa
Williams, H. J.		Tulsa
Biddle, A. G. W.	The Texas Co.	Tulsa
Wilsey, L. A.		Bartlesville, Okla.
Oppenheimer, L. M.	Champion Oil Co.	Tulsa
Ginter, Roy L.	Tulsa Laboratory, Inc.	Tulsa
Neal, H. B.	Gypsy Oil Co.	Tulsa
Neal, R. O.	D. B. Mason Co.	Tulsa
Thomas, R. W.	Baltin Gasoline Co.	Ranger, Tex.
Scherer, A. T.	Sinclair Oil & Gas Co.	Tulsa

Minnesota Jobbers' Annual Convention A Record Breaking Meeting

By Ward K. Halbert

STAFF REPRESENTATIVE

MINNEAPOLIS, April 24

VISITORS at the annual convention of the Minnesota Petroleum Association, which closed here today after a two-day session at the West Hotel, declare it was the most remarkable state gathering of oil jobbers they ever attended. There were 215 registrants at the meeting and among them were more jobbers than can be corralled at some national gatherings of oil men. Meetings were fully attended and discussions were participated in popularly.

A dozen exhibitors who paid the association nothing for their spaces were delighted with the volume of business they did.

Immediately following the adoption of a new constitution, the election of officers was held the second day of the convention. Although the new constitution increased the directorate from eight to 12 members, no change was made in the method of selecting officers, which is done in a unique way in Minnesota—directors are elected by popular vote after which they pick the officers from among themselves. The new president is J. M. Wolf, head of the Southern Minnesota Oil Co. of Fairmount. He was chief executive already in the absence of the president, W. D. Wamsley of Shaffer Oil & Refining Co., who resigned when his company transferred him to a territory in Wisconsin.

R. A. Guiberson, Cities Service Oil Co., St. Paul, was chosen first vice president. William A. Syreen of Syreen Bros., Ironton, is second vice president and J. R. Leach of Bartles-Minnesota Oil Co., Stillwater, is treasurer. All the officers except Mr. Syreen were members of the directorate last year, and the four new directors beside him are H. W. Footh, Mankato Oil Co., Mankato; E. L. Lyman, Rochester Oil Co., Rochester; H. E. Vance, Peoples Oil Co., Bemidji, and J. E. Vercelline, Twin Ports Oil Co., Duluth.

Besides the officers, four directors succeed themselves. They are W. A. Anderson, Winona Oil Co., Winona; N. C. Beim, W. H. Barber Co., Minneapolis; W. M. Jacobson, Pryamid Oil Co., Minneapolis; and F. W. Reichert, Red Wing Oil Co., Red Wing. Paul E. Hadlick, who has been in charge of the activities of the organization since Jan. 1, was re-elected secretary.

The Minnesota group was one of the first state oil associations to employ the services of a full time secretary but it was without one during most of 1923. Following the resignation early last year of W. B. Cline, secretary's work was carried on by S. E. Smith of the W. H. Barber Co., who served gratis.

Active membership in the association now is more than 100 and Mr. Hadlick proposes to double it this year. Once in the last 12 months there were as few as 30 members in good standing.

Oil Inspector Exhibits

Exhibit booth No. 13 was occupied by the state oil inspection department. Hjalmer Nilsson has been state oil inspector in Minnesota for years and during all his term of office has enjoyed the friendship and support of the oil jobbers of the state. Whereas the oil inspector in most states is looked upon as a whole unnecessary evil, an expensive political pensioner, and a pest, Mr. Nilsson is a friend of the oil industry and is boosted by the state government and the jobbers alike. To further show that his department is maintained by the state to serve the oil men in it, Mr. Nilsson kept one of his chemists in the booth all during the convention. And at all hours of the day some jobber was in the booth having a sample tested or taking practical instruction in making distillation tests.

The hotel donated the space to the department, and the department in turn furnished the man, and displayed an interesting exhibit besides. Mr. Nilsson was on the program for an address the first day. He discussed briefly the details of his work for the oil men.

Forenoon of the first day was a business session. Acting President Wolf and Secretary Hadlick made their annual reports. C. B. Mills, a Minneapolis bank, delivered the principal address on "Banking as it Pertains to the Oil Jobber." After lunch Leod D. Becker of Galesburg, Ill., secretary of the American Association of Oil Burner Manufacturers, delivered an address and led a discussion on "Oil Burning Equipment." The annual banquet and a pleasing entertainment took place Wednesday evening, starting at 6:30 o'clock. No business was allowed at the banquet.

Second Day Active

Two other state officials came before the oil jobbers on the forenoon of the second day. First was Burton L. Kingsley, state fire marshall, who talked about "Fire Hazards in Handling Oil" and distributed some booklets containing the state fire laws. Mr. Kingsley declared that he proposed to enforce rigidly the rule that all tank wagons shall drag a chain to ground static electric currents and eliminate sparks which may cause fires. He stated that he was preparing a set of rules governing installations of oil plants and invited the association to appoint a committee to work with him in the compilation of these rules.

Following Mr. Kingsley, R. F. Barron, state commissioner of weights and measures came before the gathering. He brought some horrible examples of bad oil measures to the platform. One was a battered five-gallon tank-wagon bucket. "If all oil measures were as inaccurate as this red bucket, Minnesota motorists would pay for 5 per cent more gasoline than they get," he said. Most of his time was spent in explaining aspects of the state's law on weights and measures and advising the oil men how to keep their pumps and measures accurate.

L. V. Nicholas, president of the National Petroleum Marketers' Association, arrived in Minneapolis on the last day of the convention, returning to Chicago from a meeting this week of the Northwestern Independent Oil Association in Lewistown, Mont. The Minnesota jobbers insisted on an address before lunch Thursday, although his name was not on the program. In half an hour he outlined the workings of the national advertising campaign of the Independent Oil Men of America and the national coupon interchange. He had time to touch briefly on the billboard advertising campaign being conducted by the Wisconsin and Illinois jobbers.

During the afternoon the newly elected directors retired to private session and elected the officers for 1924. In the meantime two representatives of S. F. Bowser & Co., had charge of the general meeting. With the assistance of slides and a projector C. H. Bromley, manager of the Richardson-Phoenix division of the company, talked on "Automatic Filtration and Lubricating Systems as Applied to the Smoke Stack Trade." After the lecture the jobbers gathered around the speaker for expert advice on lubricating systems and recovery plants for used oil, which are being operated with great success in certain types of manufacturing plants. The speaker named several manufacturing plants in the west recovering large percentages of their used lubricant. This is not to be confused with crank-case oil recovery, he says.

Adopted Resolutions

A resolutions committee consisting of William Lipp, Carver County Oil Co., Waconia; J. F. Taylor, Villard Oil Co., Villard, and Albert Mohn, Red Wing Oil Co., Red Wing, drafted two resolutions which were unanimously adopted. The first was an expression of thanks to Minneapolis and its sev-

eral institutions which contributed to making the convention a success. The second was as follows:

"Whereas the members of this association are all Independent oil jobbers, it behoves each and every one to conduct his business as such, and support the other Independent branches of the industry."

The policy adopted by the Minnesota association in allowing equipment exhibits was one which created favorable comment. It has long been customary at conventions to permit equipment men to exhibit at gatherings of their customers, usually under the consideration that they contribute a fee to the maintenance of the association. This was different. Equipment men are allowed in the Minnesota Petroleum Association as associate members and are asked the same membership fee as an active member, $25. Any associate member was allowed to exhibit who wanted to do so, and members only were admitted. To prevent certain equipment men from feeling that they were being forced into the association, buying a membership instead of a space, the officials ruled that no associate memberships would be granted between April 1 and the date of the convention. The following associate members exhibited:

George A. Brown, Brown Sheet Iron & Steel Co.; R. B. Grant, Ward-Grant Co.; S. A. Trageser, Oil Equipment Corp.; J. F. Jensen, St. Louis Pump & Manufacturing Co.; C. C. Brandt, Tokheim Oil Tank & Pump Co.; A. H. Van Hatten, Western Steel Products Co.; G. A. Burns, Butler Manufacturing Co.; T. J. Hegland, Dayton Pump & Manufauctring Co.; Howard Morrell, Milwaukee Tank Works; R. G. Conklin, S. F. Bowser and Co.; C. R. Fairbairn, Blackmer Rotary Pump Co., and A. J. Ringsrud, Morrison Brothers.

Oil & Burner Men Unite In Advertising

Staff Special

MINNEAPOLIS, April 25.—The Minneapolis Oil Heating Association is an example to men interested in the oil and burner industries of the country. Here the two interests have effected a remarkable co-operation. Both oil men and burner men are members and regular meetings are held. The last one assembled at the Radisson Hotel here Thursday night. Oil men talked, as well as a representative of the Underwriters Laboratories and the state fire marshall. Leod D. Becker, secretary of the American Association of Oil Burner Manufacturers who came to Minneapolis to the state convention of oil jobbers also addressed the gathering.

C. H. Chalmers, president of the Chalmers Oil Burner Co., is president of the city association and also a director of the A. A. O. B. M. Harold Cook of the Sunstrom Engineering Co., is secretary. The organization is conducting an advertising campaign in which the oil companies bear a fair share of the expense. Space is used in daily publications in the Twin Cities, to the extent of half a page a week at least. Occasionally a full page is used.

Don't Press The Farmer' Oil Man Advises

MINNEAPOLIS, April 25.—"The farmer of the northwest has more money in his pocket today than at any time in his history, not excepting the boom years," was the startling statement made at an informal meeting of Minnesota oil men during the course of the recent convention of jobbers here. The name of the economist is withheld upon request, but he stated to his fellow jobbers that he met no difficulty in selling material for cash. He does not pretend that the Minnesota farmer is in a sound economic condtion at present—on the contrary he believes many farmers are temporarily insolvent but basically sound and entitled to help from the whole mercantile world.

The cash the western farmers have in their pockets today is more than offset by debts, the jobbers stated, nevertheless the cash is there and can be had in payment for necessities of merit. "The farmers are not paying their debts now, nor can they be blamed in every case," he says. "It is not a mark of dishonesty. Farmers here, as elsewhere hold their obligations sacred. Many of them are prone to consider their obligations first and their personal comfort second, but the time has come in the west when they think having cash available is a matter of safety for themselves and their families."

When times are good and conditions normal, most any farmer who has a note in bank coming due and money in his pocket, will apply the money on the note. He will pay it off if he can, and if he can't pay it all he will reduce the face of it at the time of renewal to the extent that he leaves himself "broke" so far as cash is concerned, knowing that if he falls in need of money later on he can borrow a little more from the bank. But conditions are not normal and many farmers do not have credit at their banks.

The epidemic of bank failures in the northwest is sufficient in itself to make many would-be depositors hold out their cash, but the farmer has still other reasons. In the present condition of the banking system credits are hard to get. The farmer knows if he wants more money he may be refused. He must have money where he can put his hand on it, so he keeps it in his sock. This situation has presented grave problems to the oil men who deliver gasoline and kerosene to the rural trade. Farmers are prone to avoid the oil men to whom they owe large bills and when they need oil they spend their cash with somebody else. The oil men, of course, want to retain their accounts and hold their valuable customers.

"As a matter of pride, the farmers who owe me money will not come to me and offer to pay cash for their current requirements," said the speaker. "and for that reason I am making the proposition myself. I go to my desirable customers and say something like this:

"'Tom, I know conditions are bad and you are in a bad way to pay your bills. But I have to have money to run my business and you have to have oil to run yours. I want to keep selling you your oil and I will give you my cash discount for what you buy and pay for. In the meantime we will let the old bill ride along until times get better,' and it works. In this way I hold my trade, get the benefit of the farmer's cash in hand, and secure the old debt. I think any jobber with farmer account on his books can do the same thing."

Gov. McMaster Erecting 12 Gasoline Tanks

SIOUX FALLS, S. D., April 25.—Governor W. H. McMaster has taken another step toward becoming a factor in the oil marketing business before he becomes senator, and has ordered 12 20,000-gallon Wayne tanks. The tanks are being delivered in the state now but installation has not started. This is the first equipment the governor has purchased with which to handle gasoline for resale. Heretofore marketing has been done through equipment belonging to the state highway department.

The 12 tanks are to be scattered over the state at points where they will be most easily accessible, in the opinion of the authorities. No two are to be installed at the same place. The names of the dozen "favored" towns are not known positively by oil men here but it is understood that Sioux Falls, Yankton, Madison, Watertown, Huron, Aberdeen and Mitchell are among them. No products will be handled except gasoline, it is understood.

Probably another of the governor's reasons for scattering the tanks about over the state is to utilize their billboard possibilities. Not that the tanks are to be lettered or to carry campaign literature on them, nevertheless they will have their weight with passers-by who would like to have the "blessings" of cheap gasoline brought to their doors. Up to now the cheap motor fuel has been lavished with unmistakable partiality on Mitchell motorists, of which there are not enough to elect a senator.

The gasoline sales campaign has been going on at Mitchell ever since last September. The price there has ceased to bear any apparent relation to the posted tank wagon market in South Dakota, but is changed at odd times as the cost of gasoline in tank car lots, Group 3, changes. In other words, the service station price at Mitchell is based on the tank car price. It is expected that this policy will be inaugurated wherever new tank installations are made.

Registration Of Minnesota Jobbers

Name	Company	Address
Allenbach, C. G.	Cities Service Oil Co.	St. Paul
Anderson, Anton	Butler Manufacturing Co.	Minneapolis
Anderson, Herbert K.	Interstate Oil Co.	Minneapolis
Bartell, John	Rosemount Oil Co.	Rosemount
Bascom, D. S.	Milwaukee Tank Works	Milwaukee, Wis.
Bates, E. L.	Dayton Pump & Mfg. Co.	Minneapolis
Becker, Leod D.	Amer. Assn. of Oil Burner Mfrs.	Galesburg, Ill.
Behring, W.	Pure Oil Co.	Minneapolis
Beim, N. C.	W. H. Barber Co.	Minneapolis
Bell, E. C.	Skelly Oil Co.	Minneapolis
Bennett, W. H.	St. Louis Pump Co.	St. Louis, Mo.
Benson, A. N.	Garage Owners Assn. of Minn.	Minneapolis
Beruhard, I.	Sinclair Refining Co.	Minneapolis
Berringer, P F.	Berringer Oil Co.	Dickinson, N. Dak.
Blakely, E. H.	Tidal Refining Co.	Omaha, Neb.
Bolduc, A. T.	Skelly Oil Co.	Minneapolis
Boltz, J. H.	Boltz Oil Co.	Barnesville
Boue, D. D.	S. F. Bowser & Co.	Minneapolis
Brinkhaus, F. R.	Sugar City Oil Co.	Chaska
Bryngilson, A. W.	Detroit Oil Co.	Detroit, Minn.
Bradt, C. C.	Tokheim Oil Tank & Pump Co.	Minneapolis
Buehler, Fred H.	South Dakota Ind. Oil Jobbers Assn.	Madison, S. D.
Burmerster, J. H.	Faribault Oil Co.	Faribault
Bruner, V. A.	Henry H. Cross Co.	Chicago, Ill.
Butler, C. L.	Cities Service Oil Co.	St. Paul
Cabble, H. I.	Cities Service Oil Co.	St. Paul
Carlson, F. A.	Watertown Oil Co.	Watertown
Carlson, H. A.	Webster Oil Co.	Webster
Casey, P. W.	Brown Sheet Iron & Steel Co.	St. Paul
Chalmers, C. H.		Minneapolis
Clark, A. M.	Southern Minnesota Oil Co.	Fairmont
Cline, W. B.	Roxana Petroleum Corp.	Kansas City, Mo.
Coates, John	Coates Oil Co.	St. Paul
Conklin, R. G.	S. F. Bowser & Co.	Minneapolis
Conley, W. A.	Nicollet County Oil Co.	St. Peter
Cooley, W. E.	Lucas Pump & Tank Co.	Dayton, Ohio
Cotter, R. H.	Ward-Cotter Co.	Anoka
Combs, V. A.	Union Oil & Finance Co.	Minneapolis
Curran, J. M.	Community Service Station Co.	Ft. Dodge, Ia.
Dahlby, G. E.	Morrisson Bros.	Minneapolis
Dale, C. C.	Perfection Rotary Pump Co.	Minneapolis
Degnan, John	Inspection Department of Minn.	St. Paul
Deming, J. J.	Wabash Oil Co.	Wabash
Dillon, C. N.	Cities Service Oil Co.	St. Paul
Divinny, C. C.	White Eagle Oil & Ref. Co.	Minneapolis
Donaldson, C. H.	Donaldson Oil Co.	Pipestone
Dunboy, Leo	Cities Service Oil Co.	St. Paul
Dyar, E. M.	Midwest Oil Co.	Minneapolis
Eason, E. D.	Bolene Ref. Co.	Minneapolis
Eden, Arnold C.	Brown & Bigelow	Minneapolis
Elmquist, V. C.	White Eagle Oil & Refining Co.	St. Paul
Erickson, E. S.	Indian Refining Co.	St. Paul
Fairbairn, C. R.	Blackmer Rotary Pump Co.	Minneapolis
Ferry, J. A.	Jefferson Oil Co.	Albert Lea
Fergil, Max	Pine Island Auto Co.	Pine Island
Ferman, J. W.	Sinclair Refining Co.	Minneapolis
Fifield, John	Local Oil Co.	St. Cloud
Flatberg, Ole	Jasper Oil Co.	Jasper
Flatley, W. P.	Lake Region Oil Co.	Buffalo, Minn.
Footh, E. C.	Mankato Oil Co.	Mankato
Freeman, R. S.	Flour City Fuel & Transfer Co.	Minneapolis
Friedman, A. E.	Twin Ports Oil Co.	Duluth, Minn.
Furben, F. C.	The Pure Oil Co.	Minneapolis
Galbraith, H. H.	Clarkfield Oil Co.	Clarkfield
Gehl, Charles R.	Gehl Oil Co.	Pine City
Grant, L. W.	Nicollet County Oil Co.	St. Peter
Grant, R. B.	Ward-Grant Co.	Minneapolis
Griffin, W. A.	Duluth Oil Co.	Duluth
Grininger, G. E.	Eagle Oil Co.	St. Paul
Gulbranson, R.	Cities Service Oil Co.	St. Paul
Gustafson, G. M.	Cottonwood Oil Co.	Cottonwood
Guttersen, A. W.	Willhelm Oil Co.	St. Paul
Hancock, John	Yale Oil Corp.	Minneapolis
Harber, H. P.		Albert Lea
Heard, R. H.	Federal Oil Co.	Minneapolis
Hegland, T. J.	Dayton Pump & Manufacturing Co.	Minneapolis
Heinen, John N.	Rogers Oil Co.	Rogers
Heisler, J. M.	Mille Lacs Oil Co.	Milaca
Hiedex, N. C.	Pure Oil Co.	Minneapolis
Hills, D. M.	Sinclair Refining Co.	Minneapolis
Hirt, A. E.	Hector Oil Co.	Hector
Holen, W. F.	W. H. Barber Co.	Minneapolis
Hubbard, F. C.	Hubbard Automatic Oil Burner Co.	Minneapolis
Hughes, W. S.	Clayton Oil & Refining Co.	Minneapolis
Jahns, Alvin	Jahns Oil Co.	Springfield, Minn.
Jarkow, George	Bartles-Minnesota Oil Co.	Stillwater
Jennison, John	Williston Mill Co.	Williston, N. D.
Jensen, J. F.	St. Louis Pump & Equipment Co.	Minneapolis
Jerston, H. L.	Clarkfield Oil Co.	Clarkfield
Johnson, H. L.	St. Croix Oil Co.	New Richmond, Wis.
Johnson, H. M.	Spencer Petroleum Co.	Chicago, Ill.
Johnson, T. A.	Mabel Oil Co.	Mabel
Joove, G. M.	Joove Bros.	Ypsilanti
Kallgren, George H.	Thies Lumber & Oil Co.	Minneapolis
Kendall, Francis P.	H. K. Stahl Co.	St. Paul
Kerr, Albert E.	United Metal Hose Co., Inc.	Chicago, Ill.
Keys, Thomas N.	S. F. Bowser Co.	Minneapolis
Kimball, W. A.	Morrisson Bros.	Minneapolis
Kindl, H. H.	Odessa Oil Co.	Odessa
Kingsley, Burton L.	State Fire Marshal	St. Paul
Kitts, T. J.	Skelly Oil Co.	Minneapolis
Kopplin, E. H.	Kopplin Oil Co.	Litchfield
Koskie, F. O.	F. T. Hildred & Co.	St. Paul
Kotz, Sam	Ideal Oil Co.	Chisholm
Kouka, H. H.	Champion Pneumatic Machinery Co.	Chicago, Ill.
Kuethe, E. E.	State Oil Co.	Rockford
Kunz, William J.	The Kunz Oil Co.	Minneapolis
Kunz, Matt	The Kunz Oil Co.	Minneapolis
Lake, A. R.	Forest Lake Oil Co.	Forest Lake
Lake, F. J.	Forest Lake Oil Co.	Forest Lake
Laughlin, M. W.	Sterling Oil Co.	Minneapolis
Leach, J. R.	Bartles-Minnesota Oil Co.	Stillwater
Lehfeld, W. G.	Royalton Oil Co.	Royalton
Libby, C. E.	Lake Region Oil Co.	Minneapolis
Lipp, William	Carver County Oil Co.	Waconia
Liston, E. J.	S. F. Bowser & Co.	Minneapolis
Lyman, E. L.	The Rochester Oil Co.	Rochester
McElwell, S. P.	Western Steel Products Co.	Minneapolis
McMullen, A. T.	W. H. Barber Co.	Minneapolis
Maag, E. H.	Comos Oil Co.	Comos
Malmquist, Karl D.	Winthrop Oil Co.	Winthrop
Matland, A. O.	The W-K Oil Co.	Albert Lea
Mellin, E. M.	Butler Manufacturing Co.	Minneapolis
Merrill, J. A.	S. F. Bowser & Co., Inc.	Chicago, Ill.
Mersseman, E. D.	Clarkfield Oil Co.	Clarkfield
Minder, O. H.	Interstate Oil Co.	Minneapolis
Mitchell, S. H.	Benzo-Gas Motor Fuel Co.	Minneapolis
Mohn, Albert	Red Wing Oil Co.	Red Wing
Mollore, M.	Springfield Visible Pump Co.	Springfield, Tenn.
Morley, S. F.	American Oil Pump & Tank Co.	Cincinnati, Ohio
Morrell, H. C.	Milwaukee Tank Works	Minneapolis
Mosbeck, Emil	Oil Equipment Corp.	Minneapolis
Mulheran, J. F.	Skelly Oil Co.	El Dorado, Kansas
Munsen, Henry	Munsen Oil Co.	Maynard
Murphy, J. A.	Hancock Oil Co.	Hancock
Nelson, E. A.	Pelican Rapids Auto Co.	Pelican Rapids
Nicholas, L. V.	Natl. Petroleum Marketers Assn.	Chicago, Ill.
Nukus, G. A.	New Prague Oil Co.	New Prague
Nyberg, J. A.	Independent Oil Co.	Princeton
O'Dell, T. J.	Crescent Oil Co.	Minneapolis
Osten, F.	Sinclair Refining Co.	Minneapolis
Overstad, A.	Hancock Oil Co.	Hancock
Peters, Frank F.	Southern Minnesota Oil Co.	Ceylon
Perschan, Fred G.	Glencoe Oil Co.	Glencoe, Minn.
Peters, A. C.	Westbrook Tank Line	St. Paul
Peterson, A. W.	Pyramid Oil Co.	Minneapolis
Peterson, C. E.	C. E. Peterson Co.	Twin Valley
Phillips, H. A.	W. H. Barber Co.	Minneapolis
Pinney, H. M.	Pure Oil Co.	Minneapolis
Potter, L. A.	Midwest Oil Co.	Minneapolis
Purman, P. A.	Big Four Oil Co.	Sheldon, Ia.
Quast, Walter H.	Cosmos Oil Co.	Buffalo Lake
Quist, C. A.	S. F. Bowser Co.	Minneapolis
Rasmussen, Hans	Freeborn County Oil Co.	Albert Lea
Reichert, F. W.	Red Wing Oil Co.	Red Wing
Renspie, H. G.	Robbinsdale Oil Co.	Robbinsdale
Rhoads, W. A.	Martin County Cooperative Oil Co.	Sherburn
Ringsrud, A. J.	Morrison Bros.	Minneapolis
Rohde, William H.	Rohde Oil Corp.	Rock Rapids, Ia.
Rohn, Charles	Northwood Oil Co.	Northwood, Ia.
Ronning, Conrad	Jasper Oil Co.	Jasper
Rosenthal, C. C.	Rice County Oil Co.	Faribault
Ross, Fred C.		Minneapolis
Russell, G. L.	Northern States Oil Co.	Minneapolis
Sauffer, John L.	Rice County Oil Co.	Faribault
Sanneman, G. A.	Steele County Oil Co.	Owatonna
Samuelson, E. C.	Mille Lacs Oil Co.	Milaca
Sanborn, P. C.	Yale Oil Corp.	Minneapolis
Scharfenberg, H. G.	Skelly Oil Co.	Ft. Dodge, Ia.
Schmid, C. E.	Springfield Oil Co.	Springfield, Minn.
Schroeder, John	Franklin Oil Co.	Franklin, Minn.
Schroeder, P. J.	Union Oil & Finance Co.	Minneapolis
Schultz, Charles M.	Schultz Oil Co.	Clear Lake
Scott, W. E.	Bartles Scott Oil Co.	Willmar
Sefton, Fred F.	High Grade Oil Co.	River Falls, Wis.
Seyforth, Rome	Perfection Manufacturing Co.	Minneapolis
Shapiro, Carl	Northern Oil Co.	Virginia
Seymour, W. E.	Mesio Oil Co.	Spokane, Wash.
Sigvaldson, Frank	Minnesota Oil Co.	Minnesota
Simmerman, G. A.	H. K. Stahl Co.	St. Paul
Smith, S. E.	W. H. Barber Co.	Minneapolis
Smith, W. E.	The Fred G. Clark Co.	Minneapolis
Solberg, L. P.		Pequot, Minn.
Sprain, O. F.		Webster, Minn.
Staehle, H. D.	Butler Manufacturing Co.	Minneapolis
Stein, C. C.	W. H. Barber Co.	Minneapolis
Stockton, F. C.	Pure Oil Co.	Minneapolis
Stohr, W. C.	Independent Oil Co.	St. Paul
Stoll, W. G.	Morrison Bros.	Minneapolis
Stone, H. O.	Enterprise Oil Co.	Chippewa Falls, Wis.
Stone, J. Lee	National Engraving Co.	Minneapolis
Strom, W. B.	Oil Inspector	Hector
Swanson, B. F.	Anoka Oil Co.	Anoka
Syreen, William A.	Syreen Bros. Oil Co.	Ironton
Taylor, J. F.	Villard Oil Co.	Villard
Teal, J. C.	White Eagle Oil & Refining Co.	St. Paul
Thees, C. J.	Petroleum Service Co.	Minneapolis
Tousley, C. D.	Tousley Oil Co.	Le Sueur
Trageser, S. A.	Oil Equipment Corp.	Minneapolis
Trolinger, J. R.	Empire Refineries, Inc.	St. Paul
Underwood, L. B.	American Petroleum Products Co.	Chicago, Ill.
Van Hatten, A. H.	Western Steel Products Co.	Duluth
Vercelline, J. E.	Twin Ports Oil Co.	Duluth
Ward, E. A.	Ward-Cotter Oil Co.	Anoka
Warne, L. M.	Donaldson Oil Co.	Pipestone
Werner, Dudley		St. Paul
Weier, Ted	Kunz Oil Co.	Minneapolis
White, John T.	Barnsdall Refining Co.	St. Paul
White, W.	C. J. Tagliabue	Chicago, Ill.
Williams, Adolph	Independent Oil Co.	Hayward, Wis.
Wolf, J. M.	Southern Minnesota Oil Co.	Fairmont
Wunderlich, I. M.	Faribault Oil Co.	Faribault

Major Field Needed If Oklahoma's Output Is To Be Kept Up

By A. F. Hinton
STAFF REPRESENTATIVE

TULSA, April 26.

IT IS evident that Oklahoma's production is about to embark upon another downward movement, after having increased steadily for the past several weeks. How long this downward course will continue depends upon whether or not important new fields are brought in during the coming months, but in any case, it will probably be halted temporarily within the next 60 days when Burbank wells again begin to come in in bunches, and when, also, completions in the deep sand at Tonkawa may be expected to appear in the reports.

Since the end of proration and its consequent depression, the tendency among Oklahoma producers has been to bring their producing properties back to normal as rapidly as possible, and their efforts in this direction resulted in a steady increase in production among the older, settled fields of the state. While proration was in effect, and oil was "backed up" on everybody's hands, wells were allowed to go uncared for and properties were allowed to diminish in output, for the simple reason that there was no place to put the oil.

Most of the ground lost in production during proration has now been regained, although it is of course almost impossible to bring properties back to full normal output after a period of neglect, and it may be said that Oklahoma's settled production has about gotten back to the point it attained before proration went into effect nearly a year ago. This increase, stimulated as it was by a return of a market for crude and several price advances, did its part in pushing the state's production steadily upward from around 370,000 barrels daily last fall to its present figure of better than 420,000 barrels.

From now on, it may be said that this influence will not be felt in as marked a manner as heretofore. This old settled production has probably been pushed up to its ultimate figure under present-day production methods, and its tendency from now on will be along a natural decline. All of which leads up to the assertion that the Oklahoma production situation is approaching the point where new fields and new flush production will be needed to keep the state's output curve from dropping off considerably in the next few months.

Burbank has at least one more comeback in its system, although how far it will come back when new wells begin to come in is one of those moot questions we have heard so much about. Any guess as to that must be predicted on another guess as to how far the field will have declined before these new wells start coming in. One of the easiest things in the world is to guess wrong on Burbank. Our guess is that Burbank will go as high are 135,000 barrels daily again during the summer, if all the wells now drilling there on newly-acquired acreage prove is that Burbank will go a shigh as 150,000 barrels are to be heard, while some are venturesome enough to assert that the field will never see 125,000 barrels a day again.

Drilling Full Quota

On account of the manner in which these new tracts at Burbank are being drilled, this new flush production will be added to the field's total within a short period of time, so that the field's total output will shoot up suddenly, but not stay up very long. It has gone through just such experiences several times before. Operators on all the new leases evidently are supremely confident that they will get production, for on all, except a few along the edge, they are drilling the full quota of 16 wells to each quarter-section; not building the derricks and waiting for the tools from the next well, but all making hole at once, and at top speed.

At about the time they start bringing in these new Burbank wells, or possibly a little later along in the summer, Tonkawa probably will again be clamoring for attention in the minds of Mid-Continent oil men. Wells now starting on the long journey down to the 4000-foot sand directly uncovered by T. B. Slick, then will be arriving at destinations, and it is conceivable that their arrival will be accompanied by another sudden rush of production to Tonkawa's total.

We can feel practically sure, then, that Burbank will boost Oklahoma's output considerably along sometime in June, and we feel, although not so sure about it, that Tonkawa's new pay horizon may have a similar effect. But aside from these two famous fields, what else is there to look to for important production the coming summer? Is there a real major field lurking somewhere to step forward at the right moment to replace either Burbank or Tonkawa when they have definitely faded out of the picture?

Cromwell Hardly Major Field

Cromwell remains the most promising spot in the state, and probably will produce considerable oil, but so far it does not appear probable that it will develop into a field approaching either Tonkawa or Burbank. Stroud also is still developing, but enough is known of the structure there to hazard the guess that it will not cover a large area, and will not rise above the status of a medium-sized field from a production standpoint. Numerous likely-looking spots are being developed here and there, especially those producing from the Wilcox sand in territory heretofore productive at shallower levels, but these pools normally are flashy, with high flush production and early declines.

There is no denying that any wildcat well now drilling in the state may at any time drop into what will prove to be the major field whose location we

Oklahoma and Kansas Estimated Daily Average Production

Oklahoma	April 26	April 19
Bristow	51,850	52,625
Burbank	105,410	107,825
Cushing	23,520	23,280
Healdton	16,650	16,600
Hewitt	20,500	20,825
Tonkawa	37,825	38,085
Osage, except Burbank	37,500	36,500
Wewoka	7,820	7,450
Oklahoma, general	120,800	121,400
Total	421,875	424,590
Decrease		2,715

Kansas	April 26	April 19
Augusta-Douglass	3,675	3,675
Blankenship Dist.	3,080	3,110
Elbing-Peabody	8,155	8,115
El Dorado	16,090	16,130
Florence District	3,200	3,225
Fox-Bush	4,025	4,080
Greenwood County	21,575	21,610
Leon & Weaver	1,335	1,350
Kansas, general	9,780	9,810
Total	70,915	71,105
Decrease		190

are now wondering about, but suffice it to say, for the moment at least, that no such field now exists in Oklahoma, nor is one in sight anywhere along the horizon. It can safely be said that as long as the location of this major field remains shrouded in mystery, the crude oil situation in the state is on a firm foundation, no matter what apparent weaknesses are brought about by flabbiness of the gasoline market.

Current Production

Burbank again declined in daily average during the past week, in spite of the completion of 23 wells, declining 2415 barrels to 105,410 barrels daily. Tonkawa showed only a nominal decrease, going off only 260 barrels to a daily average of 37,825 barrels. The Slick well has been producing around 2700 barrels steadily, but even this was not quite sufficient to offset the decline of the remaining 672 wells in the field. The Osage, outside of Burbank, has been increasing its production steadily for some time past, and went up 1000 barrels during the past week. Recent developments west of Hominy and near Pawhuska have added several large wells to swell the reservation's daily output. Wewoka, with 51 wells, had four completions during the week, and its daily average increased 370 barrels to 7820 barrels. Cromwell averaged 7125 barrels daily from 10 wells during the week, reporting no new completions, and losing 725 barrels in production up to the time at which the report was compiled.

In Oklahoma, during the week just closed, 117 wells were completed, of which 84 were oil wells, seven gas wells, and 26 dry holes. This is an increase in oil wells and gas wells, and a decrease in dry holes, as compared with last week's figures, which were 109 completions, divided 73 oil wells, six gas wells, and 30 dry holes. Included in this week's report are 23 wells credited to Burbank.

The 84 oil wells included in this

Completions In Oklahoma And Kansas Week Ending April 26, 1924

OKLAHOMA

Carter County

Company	Well No.	Location	Depth	Init. Prod.
Magnolia	10	C NE NW NW 31-2S-2W	2552–2743	100
Sprague	4	NWc SE NW 31-2S-2W	2725–2768	210
Merrick-Kirk	3	C NE NW SW 5-3S-2W	2868–2872	40
Carter	29	C NE NE SE 21-4-2W	2840–2844	24
Carter	16	C NW NE SE 22-4-2W	2285–2312	140

Comanche County

Hanbury	1	SEc NE SW 29-2N-9W	T. D. 2550	Dry

Creek County

Savoy	1	NWc NE 23-17-8E	2769–2781	80
Red Bank	6	SEc SW SW 9-16-8E	3495–3572	450
Pure	8	NEc SW NE 17-15-8E	3752–3791	550
Eastern	2	SWc SE NE 17-15-8E	3690–3725	120
Tibbens	7	CSL SE SE 26-14-8E	2453–2494	110
Phillips	5	SWc NW SW 4-15-9E	2929–2933	1040
Kawfield	8	NWc NE 9-15-10E	2620–2642	20
Vealer et alr	1	NWc SW 5-18N-11E	T.D.2705	Dry
Prairie	2	SWc 31-17-9E	2768–2793	11

Garvin County

Magnolia	1	NEc SE 18-1N-3W	1598–1614	45

Grant County

Walters	1	NEc SW 11-25-7W	T.D.3509	Dry

Hughes County

Gilcrease	1	NEc NW 20-9-9E	3038–3052	720
Stein et al	1	SEc SW NW 8-9N-9E	T.D.3460	Dry
Papoose	1	C SE SW NW 9-9N-9E	T.D.3425	Dry

Kay County

T. B. Slick	1-A	SEc 35-25-1W	4060-4085O.W.D.	2705

Lincoln County

J. A. Hull	3	SWc NW NW 12-14-6E	4104–4124	1290

McIntosh County

Tiger Mtn	1	NEc NW SE 19-11-14E	T.D.2126	Dry

Noble County

Gypsy	70	CEL NW 2-24-1W	2198–2214	310
Comar	3-A	NWc SW NW SE 2-24-1W	2210–2215	399
Comar	8-A	C E½ W½ SE 2-24-1W	1862–1877	183
Comar	10	SWc NW SW SE 2-24-1W	1876–1884	295
Comar	8-C	C SW SW NE 2-24-1W	2202–2218	99
Comar	7-B	C NW NE SE 3-24-1W	T.D.1524	Dry

Okfuskee County

Skelly	2	NWc SW SE 4-13-8E	3506–3512	70
Calvin et al	1	CEL NW NE 34-11-11E	T.D.3011	Dry

Okmulgee County

Sinclair	3	NEc SE SE 23-16-12E	1823–1865	8M
C. F. Noble	1	SWc NE 20-15-12E	1595–1625	10
Gibson-Zahniser	1	SEc SW SW SE 14-13-11E	2486–2491	125
Eagle-Picher	1	NWc 26-12-12E	2439–2453	20
Shoenfield et al	4	CSL SE NW 4-11-12E	1524–1568	15
Logan-Wallace	3	NEc SE NE 8-13-12E	T.D.3087	Dry
Vensel-Elliot	8	NWc SE SW 18-15-14E	1691–1695	20
Hillside	8	SEc NW NW SW 28-15-15E	1798–1854	15
Lenox	1	NWc SE NW 36-11-13E	T.D.2521	Dry
Cosden-Wigton	7	NEc NW 13-13-13E	T.D.2637	Dry
Archer	2	NWc NE SW 32-14-14E	T.D.1271	Dry
Barbara	1	NEc NW SE 33-15-13E	T.D.2742 O.W.D.	Dry

Osage County

Franchot-Moore	4	NWc SW NW 11-21-9E	2241–2326	6
Knupp et al	1	SEc NE 18-21-10E	1969–1980	70
Breene et al	1	SEc NE SE NE 22-21-10E	1587–1611	300
Markham-Breene	4	SWc NW NW 23-21-10	1570–1598	400
Breene et al	7	NWc SW NW 5-21-11E	2237–2281	700
Tidal Osage	5	NEc SE NE NW 13-22-8E	2601–2670	100
Essley et al	3	NWc NE 8-22-11E	1096–1106	100
Marland	4	C SE SW SE 20-23-8E	2770–2854	768
Marland	5-A	SWc NW SW SE 20-23-8E	865–877	20
Marland	6	C SW NW SE 20-23-8E	2708–2755	3350
Red Bank	4	C NW NE NW 29-23-8E	2807–2813	3800
Amer. O. & Dev	16	SEc NW SE NE 13-23-10E	1786–1838	100
Rex Pyramid	7	CEL SE 26-23-10	1707–1730	10
Hineman-Marshall	7	CNL S½ N½ NW 17-23-11E	2073–2077	5M
H. V. Foster	3	CSL SE 22-24-9E	2102–2134	13
Kay Co	19	SWc NE SW NW 26M24-9E	2068–2101	15
Peters et al	4	CSL N½ S½ NW 33-24-9E	2141–2192	30
Lawson	1	NWc SW 28-25-8E	1120–1131	5
Devonian	9	CWL NW 34-25-11E	1679–1750	12
Barnsdall	4	C SE Ne NE 15-27-10E	1951–1961	15
Elmer J. Black	3	NEc SE SE SW 34-27-12E	1287–1305	20
Owen Osage	281	SEc NE SW 28-28-11E	1751–1776	1½M
Gardner	4	NE SW NW 34-21-10E	T.D.2559	Dry
Plymouth	2	NWc NW NE 33-22-9E	T.D.2200	Dry
Mutual	17	SEc SW NE SE 32-24-8E	T.D.773	Dry
C. K. Dresser	15	C E½ SW 34-25-9E	T.D.2113	Dry

OSAGE—Burbank

Carter	5	C SE NW SE 16-25-6E	2875–2945	245
Cosden	3	C NE SE SE 17-26-6E	2867–2929	500
Texas Co	8	C NW SW SW 3-27-5	2890–2943	200
Texas	10	C SW SE SW 3-27-5	2904–2933	700
Texas	14	C NE SW SW 3-27-5	2897–2950	250
Texas	15	C NW SE SW 3-27-5	2919–2961	1000
Comar	1	SEc SW 4-27-5	2950–2951	23
Gypsy	15	C SW NE SE 4-27-5	2870–2918	300
Gypsy	16	C SE NW SE 4-27-5	2886–2923	200
Phillips	16	C NE SW NE 9-27-5	2908–2943	500
Phillips	17	C NW SE NE 9-27-5	2903–2941	700
Sinclair	4	C Se NE SW 9-27-5	2969–2989	600
Gypsy	14	C NW SE NE 10-27-5	2935–2964	300
Cosden	10	NEc NW 10-27-5	2881–2925	565
Phillips-Delmar	14	C SE NE SE 10-27-5	2957–3002	600
Sinclair	10	C NE SE NE 15-27-5	3020–3088	125
Twin State	11	C NW NE NW 15-27-5	2986–3031	500
Twin State	12	C NE NW NW 15-27-5	2986–3036	600
Carter	15	C NW SE NE 22-27-5	2988–3029	250
Gypsy	12	C SW SE SE 22-27-5	2990–3000	25
T. A. Johnston	1	CWL SE NW 7-17-17E	T.D.875	Dry
W. J. Metzger	2	CEL SE NW 34-18-17E	T.D.875	Dry

KANSAS

Butler County

Ellis et al	1	NWc NE NE 2-27-6E	T.D.2791	Dry

Greenwood County

Fisher et al	3	NWc NW NE SW 8-23-11E	T.D.1966	Dry
Arkansas Fuel	1	SEc NW 20-23-13E	T.D.2340	Dry
Sharpless et al	1	SWc SE SE 15M4-8E	T.D.2871	Dry
Swift et al	1	SEc NE NW 3-24-9E	T.D.2390	Dry
Shawver et al	1	NEc SW 6-26-9E	T.D.2607	Dry
Mid Kansas	2	NWc SW SE 30-22-10	2548–2578	40
Empire	3	C NE SE NE 15-22-11E	1851–1879	160
Theta	9	C W½ SE 34-22-13E	1817–1840	10
Mission	1	CNL NW SW 32-23-10E	2235–2298	500
Theta	1	CSL NW 10-23-13E	1592–1618	20
Transcontinental	8	NEc SE 11-24-9E	2245–2317	200
Riverly et al	2	SEc NE 11-24-9E	2258–2332	250
Henderson et al	4	NEc SE NE SW 14-24-9	2169–2201	75
Franklin	1	NEc SE 15-24-12E	1707–1738	40
Gypsy	6	C NW SE NE 23-27-5	2962–3012	100
Gypsy	15	C SW NE NE 23-27-5	2960–3015	35
Skelly	9	C SW SE SW 23-27-5	3004–3140	300
Phillips-Pet	1	C SE SW NE 16-27-5	T.D.2991	Dry

Pawnee County

Magnolia	2	SEc 32-23-3E	4109–4123 O.W.D.	648
Carter	3	NEc 17-20-6E	3007–3052	50
SW Oil Fields	12	C SE SE NW 24-20-8E	2734–2741	150
Black-Buslyn	4	CSL NW NW 30-20-9E	2453–2473	10
Bell	4	CEL NW SE 8-20-10E	T.D.1962	Dry

Seminole County

Magnolia	1	NWc NE NW SW 32-8N-8E	2880–2895	19

Stephens County

Safety First	1	SWc NE SW 20-1S-8W	2391–2392 O.W.D.	35
Magnolia	1	NEc SE NE NW 25-1N-6W	T.D.3965	Dry

Tulsa County

Mutual	4	CEL SE NE 10-19-10E	1840–1852	2M
Chas. Page	16	CNL SE SE 6-19-10E	1495–1510	8M
Enfisco	13	CEL NE SW 15-16-13E	1619–1634	15
Titus	4	CSL NW NE 10-19-10E	T.D.1801	Dry

Wagoner County

Sewell-Gillett	4	NWc NE SE SW 10-17-16E	716–736	25
Young-Johnson	2	NEc SE SW 11-17-16	764–791	288
Young-Johnson	3	SEc NW SW 11-17-16E	818–820	½M
Sewell-Martin	5	NEc SE NW NW 15-17-16E	746–766	50
Peer	6	CWL NW SE 1-17-17E	134–152	152
W. J. Metzger	2	SEc SW SW NE 1-17-17E	714–728	2M
R. H. Towner	4	C NW SW NW 21-18-16E	660–665	15
Dodd	5	SEc NW SE 9-17-16E	T.D.810	Dry
Hauser-Sewell	1	NEc SE 31-17-16E	T.D.1250	Dry

Drilling Operations, Oklahoma, Kansas and North Texas April 26

	April 19 Loc.	Rigs	Drg.	S.D.	Total	Week Ending April 26 Loc.	Rigs	Drg.	S.D.	Total
OKLAHOMA										
Burbank	23	26	195	6	250	17	26	188	8	239
Other Osage	19	29	125	6	179	16	30	126	7	179
Bristow-Cushing	12	28	110	24	174	11	32	117	25	185
North Oklahoma	9	10	43	56	118	8	12	46	51	117
South Oklahoma	10	34	177	65	286	7	39	179	69	294
Muskogee	..	14	69	28	111	...	30	74	21	125
Okmulgee-Bristow	1	91	113	43	248	2	87	115	39	243
Tonkawa	1	2	41	14	58	3	12	45	6	66
Wewoka	14	47	124	19	204	12	40	141	19	212
Total Oklahoma	89	281	997	261	1628	76	308	1031	245	1660
KANSAS	23	77	100	58	258	43	86	150	88	367
NORTH TEXAS										
Eastland County	..	7	43	7	57	...	2	36	9	47
Stephens County	..	43	32	18	93	...	21	55	25	101
Texas Panhandle	..	5	19	12	36	...	4	20	13	37
Mexia (Powell)	..	2	37	1	40	...	11	69	5	85
E. Texas Wildcats	..	6	17	34	57	...	9	22	24	55
W. Texas Wildcats	..	64	204	77	345	...	85	193	79	357
Total N. Texas	..	127	352	149	628	..	132	395	155	689
GRAND TOTAL	112	485	1449	468	2514	119	526	1576	488	2702

week's report had a total initial production of 29,188 barrels, with an average per well of 347.5 barrels. This is a slight increase as compared with the preceding week, when 73 oil wells brought in 26,760 barrels of new production, averaging 366.6 barrels per well. The 23 Burbank wells mentioned as included in this week's report accounted for 8818 barrels of new production, averaging 383.4 barrels each. Last week, 26 Burbank wells brought in 12,457 barrels initial with a per-well average of 579.9 barrels. These figures reflect accurately the declining status of the field, as the inside locations now being drilled are coming in for only average size wells, and in many instances do not flow naturally.

Completions reported from Kansas this week totaled 17 of which 10 were oil wells, and seven dry holes, with no wells. This compares with last week's figures of two completions, equally divided between oil wells anl dry holes. The 10 new wells included in this week's report brought in 1395 barrels of new production, an average initial production per well of 139.5 barrels.

Field Operations

The past week saw a continued increase in field operations throughout the Mid-Continent field, and drilling wells in Oklahoma went over the 1000 mark for the first time in many months. Burbank is the only district in the state where there are fewer drilling operations under way this week than last. Weather conditions have been greatly improved the past two weeks and a great many wells have been started up as a consequence. Rains of the past two days probably were not severe enough to have more than a momentary effect on field work, and apparently are now over.

Out of 1660 operations now under way in Oklahoma, there are 76 locations, 308 rigs, 1031 drilling and 245 shut down. Last week, there were 1628 total operations, divided 89 locations, 281 rigs, 997 drilling, and 261 shut down. In Kansas, drilling is increasing rapidly a large gain having been recorded during the past week, as shown by an increase of 50 drilling wells, 20 locations, and nine rigs. There are now 367 operations of all kinds under way in that state, as compared with 258 the previous week.

Field operations in the various districts of Oklahoma, Kansas, and North Texas, shown in the accompanying table, show an increase of 127 drilling wells over the entire district, while total operations rose from 2514 to 2709.

Seminole-Hughes District Activity

One of the best wells of the week was the Arkansas Fuel Oil Co. No. 1 Brown, located in the SEc NE¼ of 18-9-9, in the Papoose pool, Hughes county. This well made 1476 barrels the first 24-hour gage, at two feet in sand topped at 3100 feet, afterward settling to around 40 barrels an hour. Oil tested 39.6 gravity. Latest reports are that it is cutting the oil somewhat, making about three per cent sediment. The operators are having a Tretolite plant installed to rectify the oil. The same company's building rig for its No. 2 Brown, in the CSL SE¼ NE¼ of 18, and has material on ground for No. 3 to be drilled in the SWc NE¼ of same section.

In the Cromwell field, Seminole county, Cosden Oil & Gas Co., drilled in its No. 2 Willis during the week, and it is making about 800 barrels at 13 feet in sand topped at 3482 feet. This well is located in the SWc SE¼ NW¼ of 15-10-8, and is a north offset to the discovery well of the Cromwell Oil & Gas Co. A quarter-mile south of this well, Cromwell Oil & Gas Co. is mudding off 15 million feet of gas in its No. 2 Bruner, which was drilled 20 feet into sand encountered at 3466 feet, and will drill deeper. Rock pressure of this gas was reported to be around 1440 pounds. Comparison of the logs indicates this well is 25 feet higher structurally than the discovery well a quarter mile north.

Topped Sand at 3449 Feet

The McMan Oil & Gas Co. No. 1 Holmes in the SWc NW¼ of 22-10-8, southern portion of the Cromwell field, is producing 1330 barrels daily from sand topped at 3449 feet. The Tidal Oil Co. No. 1 Harjo, offsetting the McMan well to the west, is making about 825 barrels daily. T. B. Hoffer et al No. 1 Stidham, NEc SE¼ NE¼ of 16-10-8, the best well so far completed in the field, is still making better than 3000 barrels daily. Gypsy Oil Co. No. 1 Stidham, a west offset to the Cromwell discovery well, in the NEc NW¼ SW¼ of 15-10-8, is making around 750 barrels daily. The company has seven other operations under way on this 80-acre lease, which comprises the SW¼ NW¼ and the NW¼ SW¼ of section 15. This lease offsets the Hoffer well to the east, and lies between it and the discovery well to the east.

Shaffer Oil & Refining Co., which is fighting a fire in its 62 million foot gas well in 10-10-8, north of the Cromwell field proper, is starting five wells on its 80-acre lease comprising the N½ NW¼ of 22-10-8, known as the Yahola farm. On this lease, the company's No. 1, in the NWc NE¼ NW¼, is running 10-inch casing at 1160 feet; its No. 2, in the SWc of the lease is drilling below 900 feet; No. 3 in the northwest corner of the lease is drilling at 250 feet. No. 4 and No. 5 are rigging up, the latter with rotary tools.

Daily average production of the three pools in Seminole and Hughes counties the past week was 16,805 barrels, from 68 wells, which represents a decline of 265 barrels and a gain of five wells from the previous week. The Wewoka field, in township 8-8, averaged 7820 barrels daily from 51 wells. The Cromwell field in 10-8, with only 10 wells, averaged 7125 barrels. In Hughes county, the Papoose pool added one well, bringing its total to seven, and averaged 1860 barrels daily during the week.

Osage County Developments

In the second break pool being developed by Marland and Red Bank Oil Co., in the territory northwest of Hominy, Osage county, the former company has a well making 540 barrels in its No. 1, in the NWc NE¼ of 29-23-8. This well topped the sand at 2913 feet, and is being drilled deeper. It offsets the No. 2 Hlu-me of the Red Bank Oil Co., which was completed several months ago in sand found at 2825 feet. The Marland well also is a diagonal southeast offset to the tract purchased by the Red Bank Oil Co. at the last sale for $230,000.

In the territory lying southwest of Pawhuska and northwest of Wynona, Osage county, Marland Refining Co. has a well making 50 barrels an hour at two feet in sand topped at 2685 feet in its No. 2, in the NEc of 33-25-8. This well is about a quarter-mile east of the big well of the Atlantic Oil Producing Co., in the CSL SW ¼ of 27-25-8, which is now producing 3300 barrels daily. This well got the sand at 2696 feet and has been drilled only a foot and one half in. Since its completion last January 22, this well has produced about 230,000 barrels of 41-gravity oil. In this pool, the Delmar Oil Co. is reported to have a hole full of oil in its No. 1, in the SE¼ of 27-25-8. This well has been drilled to 2561 feet.

500-Barrel Well Draws Interest To Cotton Valley Field

SHREVEPORT, April 26

FORTY-ONE completions, of which 2 were failures 5 gassers and 34 producers with combined initial yield 9560 barrels, was the record in the north Louisiana and south Arkansas and east Texas districts, comprising the Shreveport territory, during the week ended April 24.

This was a substantial decline in initial production and number of new producers, when compared with the record of the preceding week of 72 completions, of which 9 were failures, 6 gassers, and 62 producing wells with total initial yield 19,345 barrels.

Daily average production, on the other hand, showed a gain of 4560 barrels, the total for the week being 190,302. The principal gain was in Caddo light. The daily average record broke all previous showings since the flush days of 1921 in Haynesville and Homer.

One of the outstanding features of the week was the completion of the Humble Oil and Refining Co. Babb No. 1 in 14-21-10, in the new Cotton Valley field of Webster parish, which came in at 2542 feet with initial yield of 600 barrels, flowing. It also came in making around 15 million cubic feet of gas. It is by far the largest well in the new field, in fact bigger than the others combined. Activity has been stimulated as a result, and approximately a dozen locations have been made since the Babb well came in. The daily yield now is 1145 barrels, against 800 the week before. There are now five producers in the new field.

After a silence of several weeks, Nevada county, Ark., contributed a 500-barrel well, the Waters No. 3 of the Smitherman & McDonald interests, coming in at 1185 feet, in 10-14-21.

By districts the completions during the week just closed, as compared with those of the preceding week, were as follows:

Cotton Valley, Webster parish: one producer, 600 barrels; one failure the week before.

Bellvue, Bossier parish: 2 producers, initial yield 90 barrels; 3 producers, yields 65 barrels, the preceding week.

Elm Grove, Bossier parish: One gasser each week.

Antrim, Bossier parish; one failure; none the week before.

Lincoln parish, wildcat: One failure, same as week before.

Morehouse parish; 2 gassers. Ouachita parish, no completion.

Panola county, Texas: One gasser; none the week before.

Nevada county, Ark.; One 500-barrel well, compared with no completion the week before.

Smackover: One gasser and 30 producers with combined initial yield 8370 barrels, against the preceding week's record of 2 failures, 3 gassers, 55 producers with initial yield 12,180 barrels.

El Dorado: no completion either week.

Stephens: No completion this week; one 50-barrel well the week before.

Union parish: No completion; two failures the week before.

Haynesville: No completion; one 35-barrel well the week before.

Homer and DeSoto-Red River, no completion either week.

The failure in Lincoln parish, wildcat territory, was the Four Creeks Oil Co.'s Colvin No. 1 in 35-20-3, salt water, abandoned, at 2510 feet.

The Panola county, Texas, gasser was completed by the Magnolia Petroleum Co., being Steele No. 7 on the Kordan headright, at 1940 feet, initial capacity 15 million cubic feet.

SHREVEPORT, LA., April 25.—Daily average production in north Louisiana and Arkansas fields, comprising the Shreveport territory, totaled 190,302 barrels for the week ended April 24, a gain of 4650 barrels for the previous week. Red River-DeSoto, El Dorado and Smackover, showed light declines. The largest improvement was in Caddo light and Haynesville. The new Cotton Valley field of Webster parish gained 345 barrels. It was listed for the first time the preceding week.

By districts the daily average production for the weeks ended April 24 and April 17 was:

Daily Average	April 24	April 17
Caddo, light	12,940	9,200
Caddo, heavy	1,995	1,985
Red River-DeSoto	6,000	6,040
Cotton Valley	1,145	800
Haynesville	18,045	17,113
Homer	8,160	8,110
Bellevue	5,615	5,600
ElDorado	12,840	12,820
Smackover	121,362	121,684
Stephens	2,200	2,300
Total	190,302	185,562
Increase	4,650	

SHREVEPORT, April 28.—Lide and associates Templeton No. 1 in East Union Parish is reported completed at 2210 feet making at the rate of 125 barrels daily. It is an offset to the south of the Palmer Davison interests Frost Johnson No. 1 in section 17, the only other producer in Union Parish. Work is reported being rushed to build additional tankage for the oil. Already a 250 barrel tank is on the ground.

Completions In North Louisiana And Arkansas Week Ended April 24

LOUISIANA

Webster Parish—Cotton Valley

Company	Well	Location	Depth	Yield
Humble Oil & Ref. Co.	Babb No. 1	14-21-10	2542	600

Bossier Parish—Bellevue

Bliss & Weatherbee	Fee B-8	15-19-11	347	75
Humble Oil & Ref. Co.	B. & W. A-13	10-19-11	410	15

Bossier Parish—Elm Grove

Palmer & Davidson	Caplis No. 1	12-16-12	840	5 mil.cu.ft.gas

Bossier Parish—Antrim District

Tarver Bros. Pet. Co.	Nattin No. 1	15-22-14	2657	junk. aband.

Lincoln Parish

Four Creeks Oil Co.	Colvin No. 1	35-20-3	2510	s.w.aband.

Morehouse Parish

Ladell et al	Fee No. 19	22-20-5E	2292	7 mil.cu.ft.gas
H. S. Morris, trustee	Snyder No. 2	34-20-5E	2270	20 mil.ft.gas

EAST TEXAS

Panola County

Magnolia Pet. Co.	Steele No. 7	Jordan HRS	1940	15 mil.cu.ft.gas

ARKANSAS

Nevada County

Smitherman & McDonald	Waters No. 3	10-14-21	1175	500

Smackover

Company	Well	Location	Depth	Yield
Atlantic Oil Prod. Co	Brierton A-2	25-25-17	2313	50
Atlantic Oil Prod. Co	Brierton A-3	25-15-17	2320	55
Klotch & Thomas	Peace No. 5	26-15-17	2350	100
Louann-Smackover Syndicate	Mangis No. 5	24-15-17	2305	110
El Dorado Union Oil Co.	Anderson No. 1	19-15-16	2305	200
El Dorado Union Oil Co.	Hughes No. 4	28-15-16	2265	50
Gilliland Oil Co.	Kyle No. 7	29-15-16	2295	130
Jim McMurray	Lecroy No. 1	17-16-15	2090	100
Magnolia Petro. Co.	Patton B-6	31-15-16	2245	75
Mid-Continent Oil Co.	S. & B. No. 4	29-15-16	2288	100
Phillips & Pet. Co.	Humphries No. 4	33-15-15	1995	150
Skelly Oil Co.	Chandler No. 1	19-15-16	2295	200
Sure Oil Co.	Fee No. 5	30-15-16	2260	100
A. F. Tarver	Fincher No. 1	29-15-16	2290	50
Texas Oil Co.	Snow No. 2	30-15-16	2295	150
Anderson et al.	S. D. Cook No. 1	17-16-15	2095	400
Ark. Fuel Co.	Alphin No. 2	11-16-15	1990	100
Bond & Evans	Wilson No. 2	19-16-15	2070	500
LaTex Oil Co.	Hays No. 2	21-16-15	2060	400
Clark & Melat	Wells No. 3	15-16-15	2080	250
Higgins Oil & Fuel Co.	Hicks No. 2	20-16-15	2070	400
Humble Oil & Ref. Co.	Dumas No. 2	21-16-15	2065	500
McPherson et al.	Harrell No. 1	17-16-15	2060	100
Pure Oil Co.	L. Hicks No. 3	20-16-15	2080	300
Stacey et al	Lawton No. 1	19-16-15	2362	50 mil.cu.ft.gas
Standard Oil Co.	Lingleback No. 6	22-16-15	2015	160
Sutherland et al.	Ballard No. 3	21-16-15	2060	500
Texas Oil Co.	Flenniken No. 1	17-16-15	2085	400
Ramage et al.	Hedgewood No. 1	24-16-15	2080	2500
Estes et al	Freeman No. 2	1-16-17	2255	100
Jarman Drilling Co.	Neeley No. 1	1-16-17	2265	160

Wild Dominguez Gasser Makes Field's Biggest Well

By Special Correspondent

LOS ANGELES, April 23

OUT of the two big gassers which made things lively in the Dominguez field last week the biggest well that the field has yet known was completed. This is the Union Oil Co., of California Callender No. 2.

After being brought under control last Friday the well was placed on production, and on Sunday it was reported to be yielding 4000 barrels per day. The Reyes No. 2, belonging to the Shell Co., of California, sanded up after a wild spree as a gasser, and is now being cleaned out.

The Rosecrans territory, two or three miles northwest of the Dominguez field, has claimed considerable attention during the past week, also a result of three different projects. The outstanding feature there is the Union Oil Co., Rosecrans No. 1, which was first to touch an oil sand, but which has not been brought in after 10 weeks endeavor.

Rosecrans No. 1 is being cemented for the seventh time. Reports from several operators in that area are to the effect that the drillers struck a flow of artesian water in this hole, before they had drilled 2000 feet, and that this water appears to be causing all the trouble. Company officials are reluctant to discuss the question of water, but it is asserted that they are agreed upon the policy of cementing off this artesian flow as soon as they go past it in any other holes which may be drilled at Rosecrans.

The Athens No. 1, (Old Potter Oil Co., wildcat), a mile northeast of Rosecrans No. 1, which the Union Oil Co., is finishing on shares for the Barnsdall Corp., was drilled out a few days ago, following the first cement job at about 4900 feet, and it proved to be wet, according to reports from the Union yesterday. This hole is reported to have better showings in a second sand at about 4900 feet than the Rosecrans No. 1 has in the first sand at about 3900 feet.

Three-quarters of a mile east of Rosecrans No. 1, the Sandburg Petroleum Co. is making preparations to cement off its Moreland No. 1 at about 4700 feet. It claims to have 70 feet of sand in this hole.

The Rosecrans territory offers something unique in oil field development, in that it has seven wells either in the sand or rapidly approaching it, without a single well on production, and despite the fact that the first well to reach the sand has six times failed to get a water shutoff.

The Union Oil Co., is drilling the Rosecrans No. 1 and the Athens No. 1, the Sandburg Petroleum Co. is drilling the Moreland No. 1 and has started its second rig, 700 feet south of the first one, the U. S. Royalties Co. is drilling its No. 1, Globe Petroleum Corp has its No. 1 going and B. C. Morrison has started his No. 1.

Reopen Brea Canyon

Total production for the state got a 300-barrel a day lift this week when the Union Oil Co., reopened in the Brea Canyon field 20 wells which had been closed down for two years.

These wells are located on the Stearns lease. There are quite a number of others still capped, but they will be back on the production list shortly, reports say. There are several smaller companies in the Brea Canyon district which will reopen their wells the coming month, it is announced.

California Daily Production

	Apr. 26	Apr. 19
Long Beach.....	172,000	175,000
Santa Fe Springs..	73,000	75,000
Torrance	56,000	55,000
Huntington Beach.	50,000	53,000
Dominguez	7,500	6,400
Rest of state.....	270,000	266,000
Total	628,500	630,400

Torrance

The Torrance field had an exceptionally good week, finishing 10 new producers. The Petroleum Securities Co., (Doheny) completed two which did 1100 and 1250 barrels respectively, while the Chanslor-Canfield Midway Oil Co. got a 1050-barrel producer. The others ranged downward from 750 to 200 barrels a day. Last Monday and Tuesday the field reported six completions, one well doing 1200 barrels and the group rolling up an initial output of 5250 barrels daily.

It begins to look as though the Shell Co. of California may earn the distinction of discovering the second producing sand in the Torrance field. It has pioneered in deep test work in the eastern part of the field, and it is now to try for production in its Kettler No. 2 at a depth of more than 4000 feet. The hole has been bridged back to 3936 feet at which point a second water string of six and one-quarter-inch casing was landed. This string was expected to shut off the water below the first productive sand and above the second productive sand, the latter reaching from 3550 feet to 3910 feet.

Last week the Los Angeles Basin fields completed 23 new producers. Of these, Torrance finished 10, Santa Fe Springs and Long Beach each completed 5, Huntington Beach completed 2 and Dominguez completed 1.

The Kern county fields started 10 new wells last week. Four will be drilled in the Midway district, 2 in the Elk Hills, 2 in the Sunset field, 1 in the Devil's Den district and 1 at McKittrick. In the Sunset field the Pliocene Oil Co. has started its first well on Sec. 18-11-23, and in the same field the Western Minerals Co. has spudded in its No. 17 on Sec. 17, 11-23. The Pacific Oil Co. is drilling 2 holes on Sec. 35, 30-24 in the Elk Hills district. C. H. Finley has spudded in his No. 1 on Sec. 25-25-18 in the Devil's Den country.

On the basis of one-eighth royalty and the stipulation that drilling be started within one year, the Kern Belridge Oil Co. has leased to the Coast Land Co. of California (Marland), for 20 years, the W½ of the SE¼ of Sec. 22, the S¼ of the NE¼ of Sec. 23, SE¼ of the SW¼ of Sec. 10, NW¼ of the SW¼ of Sec 9, and the SE¼ of the Ne¼ of Sec. 17, 26-19, in Kern county.

In the Rio Bravo district, the Shell Co., of California is reported to be leasing considerable acreage on the basis of $15 per acre. This is in the district adjacent to Wasco, where the Main Oil Co. has recently obtained good showings, and not far from Buttonwillow, where the Mendocino Oil Co. is reported to have good showings.

At Rideout Heights, near the Whittier fields, the Mohawk Oil Co., is planning to start a well in the next few weeks, on its Denny lease. The Montjo-Johnson interests have completed rig on their Clark-Horine lease, and the Pan-American Petroleum Co. is rigging up to start the drill on its Jesrum lease.

Four wells recently started by the Petroleum Midway Co. Ltd., in a program calling for 16 holes, are all now past the 3000-foot mark, although they have been drilling for less than one month.

Tonkawa Agreement Off

TULSA, April 25:—The tentative agreement under which Tonkawa operators decided to drill not more than 15 wells to the newly-discovered deep sand, is now reported to have been abandoned, as a result of some producers refusing to agree to its terms. Some operators who were not present at the meeting at which the agreement was discussed, did not feel that they had been treated fairly, it is reported, and announced that they would proceed with development of their properties in whatever manner seemed best to them. Their action naturally caused abandonment of the plan, as any drilling agreement must of necessity be unanimous in order to be successful. Failure of the 15-well program leaves each company free to drill as many deep wells as it sees fit, but it is believed that it will not result in increasing this number more than by four or five wells at this time.

Stephens County 1500-Barrel Well Features North Texas Report

By Special Correspondent

FORT WORTH, April 26

A 1500-barrel well in the Caddo (Stephens county) 3,200-foot lime, the first completion here in some time, and the largest well in the North Texas district for some weeks, together with a Throckmorton wildcat completed as a producer from a shallow sand, kept the south half of the district from showing a total blank this past week, insofar as important new wells were concerned.

The big Stephens county well, Critten and Lace's No. 1 Cunningham, is a half mile east of other producers of these operators, but inside the proven area, and consequently of importance for it's size only.

Throckmorton county's newest producer is in the Comanche Indian Reservation, Block 127, and was drilled by D. Kinnard and associates of Wichita Falls. It is showing for a 25 to 30-barrel pumper, in sand at 949 feet, and is a mile and a half north of the Richardson discovery well, brought in a few weeks ago.

Out of more than 40 completions this week in Archer county, three were of unusual importance.

One, the Atlantic Oil Producing Co.'s No. 1 Parish, two and a half miles east of the east side of the Geraldine pools, made better than 5000 barrels daily for the first few days in sand at 1580 feet. A half dozen new rigs were reported up around this strike in a few day's time.

The second, Pace, Muse and Featherstone's No. 1 Wilson, a mile north of the Wilmot producers, has the 1580-foot sand, and is reported showing for a 200 to 300-barrel well. This well is a short distance west of the old Panther pool.

The third important completion is in the south part of the county, and east of the wildcat strikes of Green and Flowers and the Comac Co. which have attracted much attention to the southwest part of Archer county the past few weeks. This new well is the Major Oil Co.'s No. 1 Cowan Estate, estimated a 25-barrel pumper from one foot of sand drilled into at 1023 feet. The nearest production is found on the Andrews Ranch, several miles south, where there have been some shallow pumpers for several years. From the new well west to the Swastika pool, and the new wildcats, north of the Swastika, is a sweep of 12 to 15 miles.

Texas Daily Production

	Apr. 26	Apr. 19
Mexia Currie	36,090	36,710
Corsicana Powell ..	112,000	120,388
Wichita Falls Dist.	74,150	72,755
Ranger Lime	36,390	35,970
Ranger Sand, West Texas and Panhandle	12,380	8,775
San Antonio, Luling and Mirando	26,950	25,160
Coastal Texas	77,140	77,168
Coastal Louisiana..	6,215	6,140
Total	381,315	383,066

Completions North-Central Texas Week Ending April 26

WICHITA FALLS DISTRICT

Wichita County

Company	Well No.	Lease	Depth	Product*
Bradley Oil Co	24	Hirschi	1890	225
Baldwin Bros	15	Langford et al	500	junked
J. J. Douglas et al	3	Jennings	260	junked
Griswold Oil Co	24	Burnett et al	1950	40
The Texas Company	290	Waggoner	1730	40
Magnolia Petroleum	2	Waggoner-B	1720	75
Pois, Schultz, et al	2	Waggoner	1725	20
United Central Oil Corp	1	McCarty	1320	175
Panhandle Refining	2	McCarty	1320	65
Lou Ellen Oil Co	12	Kemp and Kempner	800	Aband.
W. D. Cline et al	1	Seay	1770	Aband.
Simms Oil Company	1	Kemp	1900	Aband.
Roy I. Carter	6	Kemp and Kempner	1820	Aband.
Magnolia Petroleum	101	Reilly	1730	Aband.
Keuhn, McNeiland & White	5	Sides	1350	Aband.
A. D. Robinson	8	Roller	545	10
Bass, Dillard & Bower	1	Peeler	1660	240

Wilbarger County

Tidal Oil Company	1	McCaleb	2870	Aband.
Ferguson & Watson	4	Waggoner	1540	60

Archer County

W. S. Langford	8	Kemp & Kempner	950	45
Texhoma Oil & Ref	2	Kemp & Kempner Blk 64	1490	120
Maer & Staniforth	2	Kemp & Kempner	1490	30
W. T. Willis	2	Jackson	1850	junked
Comet Petroleum	20	Ferguson	1740	junked
Wilson Drilling Co	7	Kemp & Kempner	1440	25
G. C. Wood	10	Wilson	1600	225
Atlantic Oil Producing Co	1	W. F. Parrish	1580	500
Peyton Gwynn et al	13	Mrs. J. H. Carter	1380	50
Peyton Gwynn et al	2	Wilson, Blk 16	1600	250
Denny Donovan	1	J. H. White	1625	150
Brannon & McGregor	2	Wilson	1600	15
Empire Gas & Fuel	5	Wilson-C	1650	Aband.
Empire Gas & Fuel	6	Wilson-C	1620	180
Empire Gas & Fuel	8	Wilson-C	1620	40
Empire Gas & Fuel	11	Wilson-B	1580	75
Empire Gas & Fuel	14	Wilson-B	1600	40
Camp Oil & Gas Co	13	Wilson-H	1605	130
Kentucky Oil Corp	5	Wilson-B	1580	110
Kentucky Oil Corp	4	Wilson-E	1395	115
Kentucky Oil Corp	9	Wilson-E	1590	180
Boller, Wolf & Minchew	5	Wilmot	1590	215
Maer & Staniforth	1	Scurry	1670	Aband.
Petroleum Producers	7	Wilson-C	1450	Aband.
A. T. Sibley et al	9	Wilmot	1600	180
The Texas Company	16	W. F. Parrish	1400	15
Mutual Oil Co	15	Wilson	1595	160
Mutual Oil Co	17	Wilson	1380	50
Mutual Oil Co	26	Wilson	1595	315
Mutual Oil Co	27	Wilson	1595	320
R. M. F. Oil Co	1	Wilson-E	1575	700
R. M. F. Oil Co	10	Wilson-D	1390	50
R. M. F. Oil Co	12	Wilson-D	1385	50
66 Oil Co	2	Wilson-D	1625	40
66 Oil Co	3	Wilson-D	1620	40
Texhoma Oil & Refining	1	W. H. Taylor	1615	75
Murchison & Fain	6	Wilson-Blk 8	1620	260
King, Lewis & Hempton	1	Ground	1960	Aband.
Texhoma Oil & Refining	10	Mrs. J. H. Carter	1590	60
C. H. Verschoyle	6	Wilson-B	1585	400
Oil Investment Co	1	A. D. Thompson	1660	Aband.

Archer County—South

Major Oil Co	1	Cowan Estate	1025	25
Sun Oil Co	2	Kovar	1500	Aband.
Knight & Hines	1	Abercrombie & Taylor	1800	Aband.
The Texas Co	1	Norred	1410	Aband.
Shamrock Oil Corp	5	Harbison	1360	50
Shamrock Oil Corp	1	Goldsmith	1360	100
Swastika Oil Syndicate	3	Goldsmith	1340	250
Hobbs et al	5	Goldsmith	1360	60

Clay County

Knox Finley	3	Saner-Lomax	1145	Aband.

GENERAL RANGER TERRITORY

Palo Pinto County

Pender Production Co	1	Slemmons	3560	10(oil and water)
T.&P.Coal & Oil Co	8	Robinson	1520	60

Young County

Seaboard Oil & Gas	4	Hughes-B	2420	6 mi. ft.gas
Logan, Mitcham & Taylor	1	Wilde	1500	Aband.

Stephens County

Critten & Lacey	1	Cunningham	3240	1500
Swensondale Oil Co	29	Swenson	3390	Aband.
Mahlstadt-Mook Oil Co	1	Parks	2520	Aband.

Throckmorton County

D. Kinnard, et al	1	Comanche Reservation	949	25

Eastland County

Stover, Edwards, et al	1	Ray	3290	Aband.
Dyer Brothers	2	Harrell	2830	30
Clayton et al	1	Poe	520	Aband.
Wright, et al	1	Poe	500	Aband.

Shackelford County

M. M. Bryan	11	Dennis	600	25
Hecht & Dressing	5	Broadfoot	640	30
Powell, et al	7	Snyder	586	30

Erath County

Victor Oil Co	1	Keith	3430	Aband.

Haskell County

Commonwealth Oil Co	1	Ballard Ranch	1000	Aband.

Callahan County

Dutton, et al	2	Cathey	1760	40
Burleson Oil Co	2	Isenhower	1750	30

Coleman County

Sunflower Petroleum Co	3	Gates	1055	10
Patterson Oil Co	1	Fricks	1120	junked
J. A. Robertson, et al	18	Robertson	1710	Aband.

Taylor County

Abilene Petroleum Co	1	J. C. High	2130	Aband.

Brown County

Hart et al	1	Moore	1270	Aband.

Big Gasser In Northeastern Colorado Indicates Another New Field

By Special Correspondent

DENVER, April 26.

THE most interesting news of the week from the wildcat wells comes from the eastern boundary of Colorado, where the Midfield Oil Co. has opened a large gas well less than 10 miles from the Nebraska line at around 1500 feet. No estimate is made of the flow, as the well was at once capped, but it was undoubtedly a significant discovery and one that will throw considerable light on the territory in that part of the state.

The Midfield company started operating in that district, just east of the town of Wray, in Yuma county, several years ago, drilling its No. 1 well on 14-2-43. It started in the Pierere shale, which thins out considerably as it extends away from the foothills, and opened up a flow of 2,500,000 cubic feet of gas at 1710 feet.

The gas was shut off to continue drilling and at 2699 feet it encountered a sand which showed sufficient oil to be bailed out of the hole. It went through this sand, which was approximately 90 feet thick, and ran into water beneath and stopped at 2779 feet. The drillers, apparently, failed to keep a reliable log and were uncertain as to the depth at which the water came in or the bottom of the oil sand and the company expended $15,000 to $20,000 in trying to save the well. This hole also cut two sands at approximately 2200 and 2400 feet.

The company then started two other wells on 17-2-43, one of which picked up the gas sand at 1700 feet and an oil sand at 2400 feet. The other had an oil showing at 1280 feet; gas at 1436 feet; big gas at 1620 feet and a still larger flow at 1690 feet at which point drilling was stopped. While these two wells were being drilled, the company had a geological examination made and was advised that it was too low down on the structure.

Accordingly No. 4 was located last fall on the se¼ of 20-2-43 and found the big gas sand at 1500 feet. The pressure is 405 pounds to the cubic inch. While no analysis of the gas has been made by the company, a local concern, it is declared to be wet based on gasoline drippings from a pipe run out from the casing head through which the gas was allowed to blow.

May be Wall Creek Sand

The company does not attempt to identify the sands but Dean C. Winchester, a Denver geologist who recently compiled a table of Colorado wells, gives the probable objective as the Wall Creek or Dakota sand. Should it be either of these, it is a significant discovery, as many have held that the Wall Creek pinches out as it extends to the east and southeast in Wyoming. If it is the Dakota, it is found at a much shallower depth than in north central Colorado. If it is neither of these, it possibly proves the existence of sands in northeastern Colorado capable of serving as oil reservoirs. The company is making arrangements to case off the gas and go on down to the sand which showed oil in the wells lower on the structure.

Wyoming-Montana Production

Pipe line runs in the Rocky Mountain region for the week ended April 26:

	April 26	April 19
Salt Creek	92,000	99,500
Teapot	2,675	3,900
Big Muddy	3,770	3,635
Grass Creek	3,725	3,450
Elk Basin	1,415	1,365
Greybull, etc.	90	100
Mule Creek	1,455	800
Rock River	3,135	3,250
Lance Creek	1,950	2,025
Poison Spider	275	210
Osage	610	625
Hamilton Dome	725	735
Lander	585	630
Pilot Butte	90	85
Lost Soldier	5,200	4,625
Ferris	125	150
Cat Creek	4,740	4,675
Kevin-Sunburst	4,825	4,800
Miscellaneous	650	550
Totals	128,040	135,155

The well is located approximately 150 miles due east of the Union Oil Co. of California discovery well on the Wellington dome in northern Colorado and 175 miles west and north of the recent strike in Russell county, Kan. It is approximately 200 miles south and east of the Lance Creek field in Wyoming, in which the production is found in the Dakota.

Leidecker Well Resuming

The J. A. Leidecker well on 25-33-13, La Plata county, southwestern corner of Colorado, 6 miles north of the New Mexico boundary, had not yet reached the Dakota at last reports. This well, it will be recalled, topped a sand at 2880 feet, which was at first believed to be the Dakota and from which oil rose several hundred feet in the hole. Previous to reaching that depth it had cut several sands showing oil and gas. The 2880-foot sand proved to be 12 feet thick. Oil continued to rise for a while at the rate of 100 feet a day and at last reports stood 960 feet in the hole.

The 6¼-inch casing has been set at the top of the 2880-foot sand and, as soon as it hardens, drilling will be resumed with the hole open between that sand and the Dakota. The depth at last reports was 3000 feet. Considerable activity is being shown in that district and Leidecker is moving in materials for another well. A rig is being put up near the town of Ignacio; and the Trent-Hamilton interests of California are reported preparing to move a standard rig to an 80-acre tract offsetting the discovery well. C. C. Julian and W. C. Ferguson, of Los Angeles, are with Mr. Leidecker at the well to witness the drilling in.

In New Mexico

Across the line in New Mexico, on the Hogback dome, the results have not been so favorable in the two wells started on the flanks of the dome by the Santa Fe Mutual Co., on acreage turned over to R. D. Compton by the Midwest Refining Co. for the tests. The first well, located on 30-29-17, encountered water at 780 feet two weeks ago. The second well, 1½ miles northwest of the pool on 13-29-17, struck water at 940 feet the past week. It is being cased off and drilling will continue. The test is not yet considered conclusive, as there is a sand above the Dakota which may be the horizon which is making the water.

The Rattlesnake dome, 15 miles southwest of Hogback, on which the Santa Fe Co., discovered oil of 64.2 gravity at 821 feet, on 1-29-19, looks a little more encouraging. No. 2, which was drilled 1500 feet to the southeast of the discovery well, was reported to have water at 810 feet. Unconfirmed reports state, however, it picked up another

Completions Rocky Mountain District Week Ending April 19

WYOMING

Salt Creek Field

Company	No.	Description	Depth	Production
E. T. Williams Oil Co.	18-A	19-40-78	....	700
Wyoming Associated	17-A	24-40-79	1846	1325
Ohio Oil Co.	5	12-39-79	2115	300
Kasoming Oil Co.	2-F	19-40-78	1487	2400
COLORADO				
Midfields Oil Co.	4	20- 2-43	1500	Gas
UTAH				
Gustaveson Oil Co.	4	Virgin dome	551	75
Texas Co.	1	Wayne county	2200	Aband.

sand at 846 feet which showed some oil.

In Utah

The Texeas Co. has definitely abandoned its Green River well on the Nequoia structure in Wayne county, central Utah, and is moving and storing the equipment. Hopes of finding oil in that part of the state have not been abandoned, however, as the Ohio Oil Co. and the Western Empire Petroleum Co. are still drilling in the Coalville district and the Utah Oil Refining Co. is going to make a test on the Cisco fold, just west of the Colorado boundary. The Peerless Oil Corp. of Grand Junction, is also moving a standard rig to 18-21-23, on one of the domes on this fold, and will make a test to the Dakota expected at 1500 feet.

Colorado

The Colorado wildcats disclose no news of importance. The Union Oil Co. of California lost about 1000 feet of hole in its Whittaker No. 1, 3 miles north of Fort Collins, and is drilling out a collapsed casing. This was the deepest of its 4 tests, which had reached a depth of 3010 feet when the accident happened. The Texas Production Co. has commenced moving materials for its 4 wells on the Moffat dome in northwestern Colorado but the work is slow on account of road conditions. The Midwest is still holding back its plans for four wells on as many different structures and none of the other companies are yet ready to announce locations beyond those already given. It is learned, however, that several important tests are scheduled along the south central boundary line of the state which will be ready for announcement in a few days.

Carbon Co., Wyoming

Some interest was aroused the past week when the Allen Lake syndicate opened a flow of 35,000,000 cubic feet of gas on the Allen Lake structure on 34-23-79, Carbon county, Wyo., at around 1500 feet in what is believed to be the Dakota sand, but subsequent reports say that water came in. This well encountered about 4,500,000 feet of gas in the Muddy sand at 1331 feet last fall which was cemented off and operations suspended for the winter.

About 6 years ago Cosden & Co. opened up a big gas well in the Muddy sand at 1335 feet. It ran into water, however, in the Dakota and the hole was abandoned. The Allen Lake structure is about 7 miles north of the Medicine Bow dome, where the Southwestern Petroleum and Cliff Petroleum companies have some production in the Wall Creek sand and have been drilling to the Dakota. The bottom of this well is below 4700 feet and close to the objective but it is held up at 3800 feet by a collapsed casing around the tools and it is not certain the hole can be saved.

Virgin District, Utah

The operation in the Virgin field in Washington county, southwestern Utah, by the Gustaveson Oil Co., is assuming more importance than heretofore given it. According to advices from Salt Lake City, where the company is domiciled, its No. 4 well is capable of making 75 barrels daily flush production. No. 3, after a shot, is estimated at 70 barrels, and No. 5, an old well cleaned out, is estimated good for 10 barrels. No. 6 has been spudded in. Nos. 1 and 2, old wells, are estimated good for 15 barrels. No reliable tests have been made, however, for lack of tankage. The sand is found at around 550 feet.

Sunburst District

The Kevin-Sunburst field in northern Montana is now delivering around 5000 barrels of crude a day to the pipe line. It made only 400 to 500 barrels daily during the shut-down period which ended on April 1. It now appears as if the closing down of the field did not in any way injure the wells which are doing as good or better than before the period of idleness.

The Illinois Pipe Line is also taking crude from the Mule Creek field in northeastern Wyoming which was shut down for the winter. Most of this crude goes to Canada but it is probable that some of it will be taken by the United States Oil & Refining Co. which has a refinery in the Osage district.

Fremont Co., Col.

An operation a little out of the ordinary has been under way for some time in Fremont county, Col., 2 miles northeast of Canon City and near the old Florence field. C. Ferguson, of Colorado Springs erected an unusually well-equipped camp and has two of the best rigs in the state. He drilled No. 1 on 14-18-70 and abandoned it in the Morrison formation at 2240 feet. No. 2 was then started on the same lease 800 feet southeast of No. 1 and recently, it is reported, discontinued at 2000 feet. No. 3 is drilling at 2600 feet on 23-18-70 and the bottom is about 600 feet in the red beds, at which depth the 6¼-inch casing will be run in a few days. The 8-inch casing was set at 2000 feet.

The Dakota sand, carrying warm water, was found in these wells at around 1200 feet. It is understood some showing of oil was found in No. 1 in the Morrison and that No. 2 stopped at the top of the red beds.

Salt Creek

Some interesting results are being recorded in Salt Creek drilling to the third Wall Creek sand. The Ohio Oil Co. has No. 1 Tract G, on 17-39-78, 3 feet in the sand from which it swabbed 250 barrels in 12 hours. A 24-hour test could not be made as the swab was lost. It looks like it will be the best third-sand well in the field. The casing has been lowered to the top of the sand at 2843 feet. The Kasoming Oil Co. No. 12 Bywater on 22-39-78 averaged better than 100 barrels a day from the third sand for the first week. It is now on the pump and making 50 barrels a day. The same company's No. 13 Bywater, on 20-39-78, found the third sand dry. It will be continued as a deep test. The Marine Oil Co. will drill its No. DS-3 on 9-39-78, to the third sand. It is being underreamed at 2865 feet. Ohio Oil Co. No. 4 Tract K, 20-39-78, swabbed only 18 barrels from the third sand and was a disappointment.

The Kasoming Oil Co. was surprised the past week with a good producer from the shale in its No. 2-F on 19-40-78, east side of the field. It began flowing by heads at the rate of 100 barrels an hour from a depth of 1487 feet. The well had no casing except 80 feet of 12½-inch and the flow was unexpected. It is under control and the oil is being turned into the tanks.

Los Angeles Shipments Shorter Than Previous

LOS ANGELES, April 24.—Shipments of petroleum products from this harbor during the week ending today were off about 700,000 barrels in comparison with the combined shipments of the previous week, the totals being 1,195,000 barrels against 1,961,000 barrels.

The shipments were taken away by 16 tankers, nine boats took loads to Pacific coast ports, 1 went to Vancouver and the others went to Atlantic seaboard points. The shipments were as follows:

April 12

Mina Brea to Vancouver, 38,500 barrels crude for Standard Oil Co.
W. S. Miller to Portland, 73,700 barrels crude for Standard Oil Co.
David McKelvy to New York, 75,000 barrels crude for Tidewater Oil Co.

April 13

T. G. Warden to New York, 114,600 barrels crude for Standard Oil Co.
La Purisma to Martinez, 72,000 barrels crude for Union Oil Co.

April 14

Frank G. Drum to Avon, 71,000 barrels crude for Associated Oil Co.
Droche to Martinez, 75,000 barrels crude for Union Oil Co.

April 15

H. C. Folger to Philadelphia, 77,000 barrels crude for Atlantic Refining Co.

April 16

Antietam to Baton Rouge, 66,000 barrels crude for General Petroleum Corp.
Los Angeles to Oleum, 69,000 barrels crude for Union Oil Co.
J. A. Moffett to San Francisco, 64,200 barrels crude for Standard Oil Co.
M. H. Whittier to Avon 66,000 barrels crude for Associated Oil Co.
Lebec to Seattle, 75,000 barrels crude for General Petroleum Corp.

April 17

Agwimex to Baltimore, 95,000 barrels crude for Atlantic, Gulf and West Indies Steamship Co.

April 18

Agwistone to New York, 100,300 barrels of crude for Atlantic, Gulf and West Indies Steamship Co.
Richmond to San Francisco, 62,800 barrels crude for Standard Oil Co.

CASPER, April 26.—Reports reaching here say that the Imperial Oil Ltd. and Mark Rogers found 30 million feet of gas in their No. 1 test in 29-1-11W, about three miles north of the Montana boundary. About nine miles from the Imperial well, the Gladys Belle Oil & Refining Co. of Montana brought in a 25 million foot well about a year ago. The latter was on the Montana side of the line. The Imperial test found the gas in the Ellis lime, which is the pay formation of the Sunburst field. Depth was 2600 feet.

Foreign And California Receipts Fall Off

Receipts of California oil (crude and refined oils) at Atlantic and Gulf Coast ports for the week ended April 19 totaled 695,000 barrels, a daily average of 99,286 barrels, against 1,120,000 barrels, a daily average of 160,000 barrels for the week ended April 12:

(Barrels of 42 gallons)

	Week Ended Apr. 19	Week Ended Apr. 12
At Atlantic Coast Ports		
Baltimore	95,000	75,000
New York	468,000	892,000
Philadelphia	73,000	153,000
Others	59,000	.....
Total	695,000	1,120,000
Daily average	99,286	160,000
At Gulf Coast Ports		
Total Atlantic and Gulf Coast Ports	695,000	1,120,000
Daily average	99,286	160,000

According to figures collected by the American Petroleum Institute, imports of petroleum (crude and refined oils) at the principal ports for the week ended April 19 totaled 1,750,000 barrels, a daily average of 250,000 barrels, compared with 2,338,000 barrels, a daily average of 334,000 barrels for the week ended April 12:

(Barrels of 42 gallons)

	Week Ended Apr. 19	Week Ended Apr. 12
At Atlantic Coast Ports		
Baltimore	308,000	135,000
Boston	114,000	140,000
New York	265,000	309,000
Philadelphia	65,000	162,000
Others	275,000	(a)345,000
Total	1,027,000	1,091,000
Daily average	146,714	155,857
At Gulf Coast Ports		
Galveston district	518,000	515,000
New Orleans and Baton Rouge	190,000	(a)617,000
Port Arthur and Sabine district	.....	115,000
Tampa	15,000	.....
Total	723,000	1,247,000
Daily average	103,286	178,143
At All U. S. Ports		
Total	1,750,000	2,338,000
Daily average	250,000	334,000

(a) Revised.

ROSWELL, N. M., April 26.—Illinois Producers Co.'s No. 3 well in 32-18-28, Eddy county, N. M., has 1600 feet of oil in the hole from sand at 1830 feet. This company has been drilling in the field for some months and has several wells, one of which is making four million feet of wet gas from 1960 feet. This is in 25-18-27. The area is about 50 miles southeast of Roswell.

Pat Marr Gets Five Years

TEXARKANA, ARK., April 26.—Pat Marr, who promoted his Smackover properties on an extensive scale in 1923, sold a large property to The Texas Co. for more than a million dollars and promoted on a large scale thereafter, was sentenced Thursday by Federal Judge Youmans to serve five years in Leavenworth prison and to pay a fine of $1,000. This was the maximum as Marr was found guilty on one count out of the 19 in the indictment. Attorneys for Marr gave notice of appeal. W. T. Ernest, W. S. Eakins and George White, co-defendants with Marr, were found not guilty on all counts.

Discuss Field Problems At Meeting May 5

Staff Special

TULSA, April 26.—The next meeting of the Mid-Continent section, American Institute of Mining and Metallurgical Engineers, will be held Monday, May 5, in the commissioners' assembly room on the third floor of the Municipal building here. In line with the original plan of taking up in successive meetings the various questions relative to each step in the search for oil, drilling methods, and production, the coming meeting will be devoted to production methods. Two preceding meetings have been given over to leasing and drilling, respectively.

At the next meeting, Hollis P. Porter, production engineer for the Gypsy Oil Co., and vice-president of the American Institute of Mechanical Engineers, will talk on "Handling of Oil on Leases." He will be followed by John M. Lovejoy, general manager of the Amerada Petroleum Corp., and well known mining engineer, whose subject will be "Methods of Flowing Wells." Among other things, he will discuss results obtained through "beaning" wells, a practice prevalent in California, and recently tried in the Burbank field.

These meetings are open to the public, and the officers of the Mid-Continent section urge all who are interested in oil production to attend them. Large crowds have attended the last two meetings, and the forthcoming program should prove equally as attractive and interesting.

Graham Extension Brings Drilling Campaign

Staff Special

TULSA, April 26.—Intensive drilling activity in the Graham field, Carter county, which had its inception some weeks ago when Skelly Oil Co. extended the field a mile to the northwest with its No. 1 Davis, has resulted so far in the starting of 18 wells, many of which are below 1600 feet in depth, and nine others in various stages ready to drill, either rigging up or building derrick. As the Skelly well picked up the pay at 2150 feet, it is only a matter of a short time before many of these wells will be getting down to interesting depths.

The deepest of these wells is the No. 1 Williams of the Fitzgerald-Hinkle-Westheimer interests, in the CNW½ SE¼ NW¼ of 23-2S-3W, which is drilling in lime at 1822 feet. The Humble Oil & Refining Co. is not far behind, in its No. 1 Carpenter, in the C SE¼ NEP NE¼ of 22, a quarter-mile northwest of the Skelly well. The farthest northwest well in the field is the Wildwood Oil Co. No. 1 Carpenter, in the C SE¼ SE¼ SE¼ of 15-2S-3W, a full half-mile northwest of the Skelly well. This test is drilling below 800 feet.

Twin State Oil Co. is drilling three wells on its Davis farm, in section 23, near the Skelly well. This company's No. 1, in the C SW¼ SE¼ NW¼ of the section, is drilling at 1060 feet. Its No. 2, in the C NE¼ NE¼ SW¼, is drilling at 1100 feet, and No. 3, in the NW¼ NE¼ SW¼, is just getting started at around 200 feet. Ed Galt is driling at 1333 feet in his No. 1 Cruce, in the C SE¼ SW¼ NW¼ of 23. Humble also is drilling on this farm, its No. 1, in the C NE¼ SE¼ NW¼, being down to around 590 feet.

The Skelly Oil Co. is drilling at 1310 feet in its No. 2 Davis, in the C SE¼ SW¼ NW¼ of 23, one-eighth of a mile south of the extension discovery well. The discovery well is now down to 65 barrels daily.

School Lands Are Leased

FORT WORTH, April 26.—Falls county public schools may have an income from oil royalties soon, county commissioners having leased 1000 acres for an immediate test. Falls county has a total of 7078 acres of school land in Archer county, some of it within 4 miles of production, and with wildcatting going on all around.

The first school land lease was given for a bonus of $1,000 and a contract to put down an 1800-foot test immediately E. R. Boyles of Reagan is the lessee.

SAN FRANCISCO, April 24.—Chester W. Washburne, consulting geologist of New York City, has left San Francisco on his return to the East, however, stopping in the states of Washington and Wyoming on business.

Gulf Coastal, Texas Completions Week Ended April 26, 1924

Company	Lease—Well	Field	Depth	Prod.
Edgerly Petroleum Co.	Carbello 10	Orange	3375	50
Rycade Oil Corp.	State "E" 1	Orange	4550	4000
			20% B. S. & W.	
Mutual Oil Co.	Chesson 9	Orange	2910	150
Sun Oil Co.	Gunstream 3	Orange	3525	100
Paraffine Oil Co.	Paraffine 56	Batson	710	20
Wilson-Broach Co.	Higgins 45	Spindle Top	765	35
Baker Oil Co.	Trembly 10	Spindle Top	925	100
Gulf Refining Co. of La.	Vincent 21	Vinton, La.	2330	25
G. B. F. Oil Co.	Lucky 7	Vinton, La.	2065	100
Edgerly Petroleum Co.	Vincent 2	Vinton, La.		50X

X—Pumping.

Attack Validity Of Louisiana Titles

By Special Correspondent

WASHINGTON, April 28.—Attack upon the titles under which the Gulf Oil and other interests established in northwest Louisiana hold their lands has been asked by Rell S. Theriot, attorney, of Shreveport, on behalf of sixty persons who claim rights in the lands under federal laws, as against the state of Louisiana, to which the federal government ceded the lands under the swamp land and other statutes. The oil company titles were derived from the state.

Probably with a view to gaining support in Congress and having that body take up the question, it has been suggested there is a scandal back of the proposition that would make the Teapot question look pale and aenemic. Theriot has laid his case before Assistant Secretary Finney of the Interior Department, with a view to having that branch of the government undertake something that will prevent the eviction of sixty claimants, who, if they could establish their titles, would be in a position to collect royalties from the oil companies.

Thus far the litigation in behalf of the settlers has gone against the claimants. In other words the question is of such long standing, and not a discovery, that the courts have dealt with it, to the discomfiture of the claimants.

The Pine Island lands, in which the Dixie Oil Co., Standard of Indiana producing subsidiary, has title, are involved, together with those of other oil companies. Theriot suggests that Louisiana got title to the lands by fraud and that therefore the titles by which the oil companies hold the lands, generally as leases, are fraudulent.

The lands are in Caddo parish, the seat of which is Shreveport. They are in the Cross Lake section, where the claimants live. Because they are on the point of eviction they suggest that the federal government undertake to recover the lands from the state and allow them to continue in possession; notwithstanding that the federal government and the courts have decided against them. In connection with the suggestion of such action by the Interior department, the insinuation is made that, in the last ten years the federal government has been giving away property worth $40,000,000, without the shadow of right from the state to receive the acreage or give leases on it.

Ferry and Cross lakes, it is claimed, were created as long ago as 1775 by a log jam in Red river, a meandering stream which one year is in one place and in another two or three years later. In that year it is claimed the Red was in flood greater than ever before and all the logs that had been cut or produced by storms, collected in a jam that formed two shallow lakes.

At first the claimants assert, the state claimed under the swamp lands act of 1849. That claim was held untenable in part because the lands were under a kind of cultivation and had been since 1805, when a Lewis and Clark survey showed them in the possession of settlers who pastured their herds on the islands that existed in times of high water and then on the beach or overflow lands when the water receded, during the dry season, and grass grew luxuriantly. The state, when it lost them as swamp lands, claimed them as being within the limits of high tide on navigable streams, the chief of which was the Red river.

Among the averments is that surveyors for the national government fixed ridiculously high marks to which they said the waters of the navigable streams rose, and thereby based title to the state.

An attempt will be made to interest President Coolidge, also Senators Ransdell and Broussard, as if the two last mentioned did not know anything about the law questions that have been in existence as long as the senior of them has been in public life.

Except for the fact that the Senate has been investigating oil leases, the Louisiana claimants probably would not have received any publicity as to their latest move to prevent eviction of so-called settlers, about whose lands there was not much thought until after oil was discovered, although Louisiana claimed title to them long before that event.

Lewis Says Drilling Of Teapot Was Desirable

By Special Correspondent

WASHINGTON, April 28.—Rounding out and finishing touches were placed upon the Teapot Dome inquiry this week. At the instigation of Senator Spencer of Missouri, a Republican member, James O. Lewis, of Tulsa, one of the committee's experts was recalled to reiterate his opinion about the lease for drilling the Wyoming reserve.

Between 60 and 70 per cent of the Wyoming lease would have been drilled by wells in Salt Creek field had the government not made the contract with the Mammoth Oil Corp.

Principles which compelled the drilling of the Elk Hills reserve in California, he said, controlled in the case of the Teapot. He said he had no first hand knowledge of conditions in Elk Hills but he said there could have been no consideration calling for the drilling in Elk Hills that would not have been operative in Teapot. Drilling of offset wells in that part of the Wyoming reserve north of the fault that is supposed to divide Salt Creek field from Teapot Dome proper, he said, would not have prevented the draining of at least 35 per cent of the navy's oil from the part north of the fault.

Lewis' only criticism of the government was that it did not elect to do its own developing, instead of hiring Sinclair.

"The whole reserve should have been drilled?" asked Senator Spencer.

"Yes; and as rapidly as possible," answered Lewis. "Any delay would have placed in jeopardy the amount of recoverable oil."

Drilling the reserve, Lewis contended was the only way to have made the Teapot Dome of any use in an emergency. It would have taken two years after development had been decided upon to get out half of the recoverable oil—if Salt Creek had not drained it so as to make it of no value to the navy whatever. The value of the reserve, he said had been reduced much by the discovery that 1400 acres of it were gas and no oil at all.

That was the Republican side of the rounding up and smoothing part of the process. Senator Walsh of Montana, for the Democrats, put into the record a letter from Commander H. A. Stuart, in charge of the reserves while Daniels was secretary of the navy, in which Stuart made the declaration that it was the Daniels policy to keep as much oil in the ground as possible. Stuart, by reason of the change in the political complexion of things by reason of the coalition between the Democrats and irregular Republicans, has been restored to command of the reserve situation, under Secretary Wilbur and is adviser to the receivers for the Wyoming project.

Stuart wrote that it was impossible, almost, to persuade Daniels to do any defensive drilling lest what he did would be taken as a precedent for the complete development of the reserves. Some defensive drilling was done, but not because Daniels or his advisers wanted to do it but because even a blind man could have seen that the navy was losing the oil the secretary of the navy was supposed to be preserving the oil in the ground, and that, unless drilling was done, the navy would not obtain much of the oil, at any time.

Protest Atkins Grant For Pipe Line

DENVER, April 26.—Briefs are all in on the application of the Colorado Gas & Oil Pipe Line Co. to the Colorado public utilities commission for a certificate of convenience and necessity for the construction of a pipe line from northern Colorado to Denver, and a decision is expected at an early date.

The company was organized by the Atkins interests of Louisiana and application for permit was made shortly after the Union Oil Co. of California brought in the discovery well. Protests have been filed by the Union company, the Public Service Co. of Colorado and others.

The company granted a permit will practically have a monopoly and the protestants are opposed to this privilege being given to a company which so far has no oil or gas to transport, though it claims it will be ready to operate as a public service company whenever either product is available.

Tell Senators To Stop Vindictive Investigation, Says Davis

Staff Special
TULSA, April 26.

WILLIAM N. DAVIS, president of the Mid-Continent Oil & Gas Association, and a member of the federal tax simplification board, has written a letter to members of his association calling their attention to the senate investigation of the bureau of internal revenue.

Mr. Davis fears that such efficiency as had been developed in the bureau's work in administering the income tax law may be broken down by vicious investigation. He points to the resignation of Dr. T. S. Adams as an indication that able men will not devote their time to the intricate governmental problems if they are to be continually exposed to slander.

Following is Mr. Davis' letter and a copy of the letter of resignation of Dr. Adams which Mr. Davis urges oil men to read carefully. He believes that men of the industry should let their senators and representatives know how they feel about the present situation.

"There is an issue before the United States Senate as to whether or not the so-called Couzens committee shall be authorized to retain Francis J. Heney at the suggestion of Senator Couzens to conduct an investigation of the bureau of internal revenue. The investigation by this committee has been in progress for several weeks with two outstanding developments:

"First: In the opinion of unbiased observers, the trend of the investigation under the direction of Couzens is vindictive rather than constructive and, therefore, demoralizing rather than helpful.

"Second: Although it is apparent that the effort of Senator Couzens is really to investigate Secretary Mellon and an attempt to unearth something irregular in the settlement of the tax cases of the corporations in which he is interested, it has been barren of results. No irregularity or corruption has been shown.

"The decision of the majority of the committee to proceed further with this line of investigation, with the hired assistance of Mr. Heney, has had a demoralizing effect upon the bureau and has caused the resignation of Dr. T. S. Adams as advisor to the committee. Dr. Adams had been in close touch with the administration of the income tax law for several years and is a man of highest character and ability. A copy of his letter of resignation is herewith enclosed and is self-explanatory. You are particularly urged to read this letter.

"It may be that the public favors a constructive investigation of the administration of the income tax law. There has been much criticism of the delays in the final adjustment of cases. We have all been more or less restless and critical on this account. But my position as a member of the tax simplification board has enabled me to know that the bureau has been slowly but surely working its way out of the mire into which it fell through nobody's fault when it was suddenly asked to undertake the burden of administering the excess profits and income tax laws of 1917 and subsequent years.

"It has made particularly good progress in extricating itself during the last eight or 10 months and if it had not been interfered with, would probably have been current on personal income tax returns before the next filing period and nearly so with corporate returns before the end of the fiscal year 1925.

"Already much that has been built up by way of efficiency in the department has been torn down by the prevailing type of sensational destructive investigation and, should it be continued more will be destroyed in the next two months than can be repaired in two years. Under existing circumstances, no employee of the bureau of internal revenue cares to take the risk of deciding any controversial point in favor of the taxpayer. The result is paralysis.

"The object in writing this letter is to bring this condition to your attention that you may have the opportunity to express yourself to your senators who are charged with responsibility in the passage or defeat of the resolution now before the senate looking to the employment of Heney and the further continuance of a sensational and perhaps vindictive line of investigation as distinguished from a constructive one. If the former line of inquiry is continued, it may bring on a crisis in business and governmental affairs—not on account of harmful disclosures but through destruction of confidence and stagnation in the departments. It is, therefore, suggested that you give this matter your immediate and serious attention.

"Quick action is necessary!"

Letter of resignation of Dr. Adams:

"When I agreed to assist in the work of your committee, it was understood that I should confine my efforts largely to the constructive work of the committee. Recent developments within the committee indicate that its constructive work is likely to be postponed indefinitely, and on this account I request the committee to accept my resignation to take effect on the receipt of this communication.

"The important shortcomings of the bureau of internal revenue lie on or near the surface. They are known to hundreds of people conversant with the work of the bureau. They are grave, but they are obvious. To exploit them

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gratuitously, to probe for the sake of probing, impresses me—if I may say so without offense—as a particularly demoralizing form of child's play. The task worth attempting, the man's work in this connection, is to devise and institute adequate remedies.

"The bureau of internal revenue is charged with the responsibility of administering, throughout a nation of 110,000,000 people, some of the most complicated and burdensome taxes ever adopted by a self-governing people. The bureau employs in its work over 19,000 persons, who assess and collect $2,500,000,000 taxes, and at the present time are authorizing for payment over $100,000,000 refunds, annually. Under such circumstances there must inevitably occur mistakes in judgment, instances of favoritism, and sporadic cases of actual graft. The committee will have no difficulty in finding cases of each kind. But they signify nothing, unless there is reason to believe that graft and favoritism are wide-spread and chronic in the work of the bureau.

"I am not familiar with, and therefore cannot speak about, the prohibition-enforcement work of the bureau. But I have been rather intimately familiar with its tax functions since the summer of 1917. I know that the personnel of the bureau has been singularly clean; that its responsible officials have been, with few exceptions, zealous and intelligent; that its leaders have fought with vigor and success the interjection of politics and politicians of the undesirable type. The bureau deserves the respect and gratitude of the American people.

"Remember this crucial fact about the work of tax officials. They are called upon to decide, in wholesale quantity, extremely complicated cases, which frequently turn upon distinctions of metaphysical nicety, or upon new points which can be decided almost as easily one way as another. The men who decide these questions are caught in a barrage of cross-fires.

"If they decide against the taxpayer, they bring down upon themselves the taxpayer's enmity and frequently the enmity of his political friends. If they decide against the government, they expose themselves not infrequently to whispered accusation and slanderous attacks from some disgruntled subordinate, who because he has not been promoted as rapidly as he thinks just or, for other reasons, nurses a suppressed grudge against his superior officer.

"And on top of this is the danger of investigation by harassed congressmen who can not possibly take time to investigate these decisions as thoroughly as they must be investigated to pass fair judgment upon them.

"The bureau does not deserve and can not bear without demoralization much more buffeting. The brief investigation already made has practically stopped some of its most important activities. Decisions and settlements which should be made, either to collect needed revenue for the government or to

relieve harassed taxpayers from further apprehension, are being held up.

"Throughout many sections of the bureau the attitude towards the taxpayer has become strained and unnatural. Officials of the timid type are evading responsibility. Others have stiffened their attitude and are now deciding points against the taxpayer which a few weeks ago they would have decided in his favor. Officials of the belligerent type are tempted to let down the bars in sheer defiance of what they regard as unmerited criticism. Intricate tax laws can not be fairly administered in an atmosphere charged with suspicion, misconstruction of motive, and accusation of graft.

"How long will it be before congress seriously undertakes to solve these difficult problems? Must there be laid upon the legislative altar the burnt sacrifice of smirched reputation and blasted character, before anything adequate will be done? Have we reached the stage where nothing short of scandal and graft will prompt remedial action?

"If so, there are evils even more menacing than the degeneracy of the federal income tax with which the American public must cope."

Passes Bill To Permit Indian Land Leasing

By Special Correspondent

WASHINGTON, April 28.—Without debate, the house passed a bill this week authorizing the secretary of the interior to lease unallotted Indian lands for oil and gas mining purposes at public auction. The measure applies to lands other than those of the Five Civilized tribes and the Osage reservation.

Under the present law these lands cannot be leased for more than 10 years for mining purposes. In order to renew contracts, the secretary of the interior applied for authorization to extend all leases for so long as oil and gas is found in paying quantities. In passing the legislation, the house provided that the states in which the lands were located would have authority to tax royalties due the Indians, as in the case of the Osage lands.

The bill now goes to the senate where Senator Harreld, of Oklahoma, chairman of the Indian affairs committee expects to obtain action on it in the near future.

Another bill just passed by the house authorizes the secretary of the interior to lease at public auction a tract of about 22 acres of unused lands belonging to the Kansas or Kaw Indian tribe in Oklahoma, on which the department believes oil is to be found. It is adjacent to paying wells.

This bill has already passed the senate but the house added an amendment giving the state of Oklahoma the privilege of taxing the royalties. Concurrence in this amendment by the senate is necessary before the bill can be signed by the president.

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Eastern Refiners Plan Publicity Drive To Tell Public About Oil

By Roger B. Stafford

STAFF REPRESENTATIVE

April 24

CAMBRIDGE SPRINGS, PA., THE latest organization in the oil industry to join the movement to abandon the industry's traditional policy of seclusion by laying before the American public the facts about oil, is the National Petroleum Association which held its semi-annual convention here April 23.

An appeal by Fayette B. Dow, Washington counsel of this association, the American Petroleum Institute and the Western Petroleum Refiners Association, that the true story of oil and the scope of the industry's operations be broadcast, resulted in the appointment of a publicity committee which will work with Mr. Dow in drafting plans for a campaign. Members of the committee are: E. M. Lyons, Tiona Refining Co., Tiona, Pa.; O. P. Keeney, Tide Water Oil Co., New York, and T. H. C. Allen, Vulcan Oil Refining Co., Coraopolis, Pa.

The nature of the campaign has not been determined. The committee probably will survey means of presenting the story of oil, and make suggestions to the trustees of the association. It is probable that the asociation will endeavor to join hands with the institute, the western refiners and possibly other associations representing different divisions of the industry in the proposed campaign.

Institute Considers Campaign

A publicity campaign is now under consideration by the institute, it was said. This may have some bearing upon what the eastern refiners finally decide on.

Effective publicity work was now being done by some of the larger companies in their advertising, Mr. Dow pointed out. This advertising was purely institutional and the direct results for the advertiser were probably no greater than the benefits the whole industry was receiving.

The association indorsed the fight of the Western Petroleum Refiners Association to have petroleum products excluded from the provisions of section 28, Jones merchant marine act, which would abolish preferential rail rates on commodities intended to be exported in other than American ships.

Mr. Dow outlined to the eastern refiners the action that had been taken so far and the effect the enforcement of the section would have in eliminating inland refiners from the export field. Enforcement would not affect the seaboard refiners because they did not have to depend on railroad rates. They receive their crude by pipe line or tankship.

Tanker Situation Reviewed

He reviewed the tanker situation, the facts of which were published on page 24 of the April 9 issue of NATIONAL PETROLEUM NEWS, showing that out of 404 tankships under American registry only one clean ship was available for the export of products of inland refiners and the seaworthiness of this one ship was questioned.

Export shipments of petroleum products from the Mid-Continent average approximately 2000 cars a month, Mr. Dow added. Six companies reported to him when he was collecting data to present to the shipping board that in 1923 they had exported 541,000 tons of Mid-Continent products.

Danger for the eastern refiners was seen by several members of the association in failure to stand back of the western operators. Were the present foreign trade of the western men cut off, they would be forced to increase their efforts in territory now served by eastern plants, it was pointed out. A demoralization of the industry in the Appalachian field was predicted.

Mr. Dow added that it never had been the intention of Congress in enacting the merchant marine bill to put any of the inland plants at a disadvantage and that he expected to get the offending section amended either through the shipping board which now had the facts or though the courts.

Not Using Rates Unfairly

He added that the inland plant was not taking advantage of the export rates to ship goods to Gulf coast ports to compete with the various products manufactured by plants there. Railroads feared the strict enforcement of the section not only for the loss of oil traffic in the southwest but through the diversion of grain and iron and steel products from the northern and northeastern regions from American to Canadian ports, he declared.

W. H. Wissing, National Refining Co., Cleveland, discussed tank car repairs. He said it was surprising the amount of charges made by railroad repair yards for fixing oil companies' tank cars when such repairs had never been made.

National Refining Co. now maintains its own repair shop, he said, and repair bills had been halved, averaging last year but $57 a car. The company also maintains inspectors and each car is carefully inspected each time it returns to a refinery. When major repairs are made at a railroad repair shop or yard, such as the changing of wheels the company orders the railroad to hold the replaced parts for inspection. The inspector nearest to the place where the repairing is done is sent to see what was wrong if anything with the replaced part. Considerable unnecessary changing has thus been eliminated, he said.

Cars Are Extra Heavy

The National also found it profitable to have its tank cars strengthened beyond American Railway Association specifications. Mr. Wissing suggested that the eastern refiners may establish joint repair shops or might place joint inspectors at contract shops.

The association's department of tests and standards in a report presented by its chairman, O. P. Keeney, Tide Water Oil Co., New York, urged that members of the association write to the American Petroleum Institute indorsing the Bureau of Standards table of coefficients of thermal expansion to the exclusion of any abridgement which had been proposed by the general committee on railroad transportation of the institute.

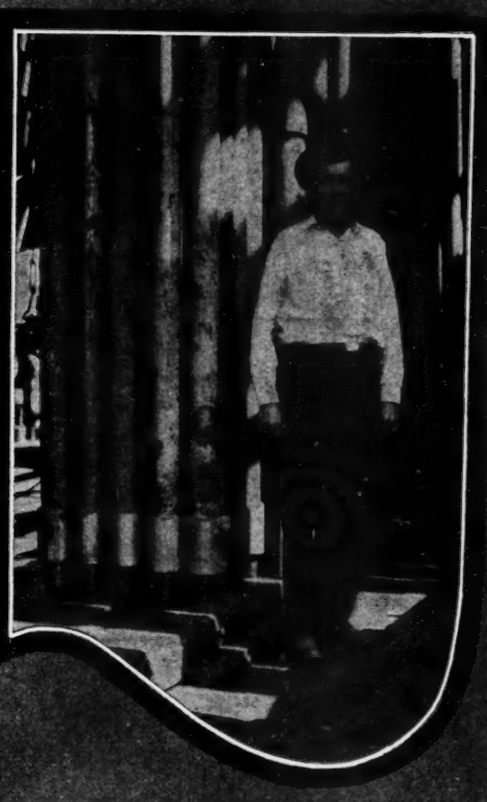
An energetic campaign for new members for the association will be conducted by a special committee which will co-operate with the membership department of which Fred G. Clark, Fred G. Clark Co., Cleveland, is chairman.

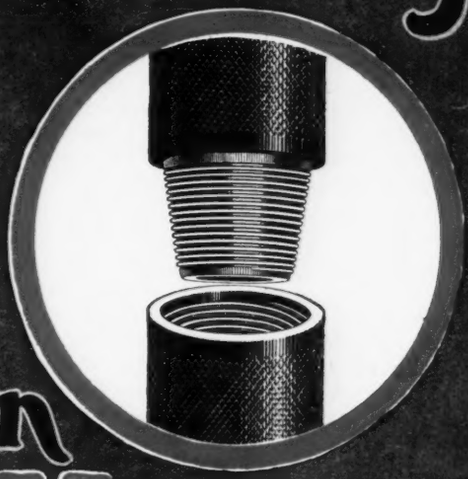
The special committee is comprised of R. E. Goodwin, Paragon Refining Co., Toledo; Col. U. G. Lyons, Conewango Refining Co., Warren, and president of the association; Harold C. Eaton, Island Petroleum Co., Pittsburgh; Otto Koch and P. C. Hubbard, Kendall Refining Co., Bradford; C. B. Cuddy and T. H. C. Allen, Vulcan Oil Refining Co., Coraopolis; Samuel Messer, Oil City; C. L. Suhr and M. A. Brewster, Penn American Refining Co., Oil City; H. A. Logan, United Refining Co., Warren; Sheldon Clark, Sinclair Refining Co., Chicago; P. F. Conerty, Butler County Oil Refining Co., Butler; Harry L. Deming, Lincoln Refining Co., Robinson, Ill.; A. F. Anderton, Continental Refining Co., Oil City; R. A. Wotowitch, Henry L. Doherty & Co., New York, and Mr. Dow.

Names of more than 25 refiners having plants east of the Mississippi river were suggested for membership.

Resolution extending the sympathy of the association to Judge C. D. Chamberlin, secretary and general counsel of the association who has been ill were adopted. This was the first meeting of the association Judge Chamberlin has missed since he became affiliated with the organization. He wired the convention that his health was improving and that he expected to be back at his desk in a short time.

Another California Company Who Has Standardized





ON HUGHES "ACME" TOOL JOINTS

Bob Hickerson, Superintendent, Jameson Oil Co., Santa Fe Springs and Huntington Beach, California

This Company has standardized on Hughes "Acme" Tool Joints in all sizes—3-inch joints shown in picture.

HUGHES TOOL CO.

HOUSTON, TEXAS, U.S.A. BRANCH-LOS ANGELES, CAL.

THE EDITORS' VIEWPOINT

Fort Worth Should Watch 'Em

IF Fort Worth really wants the public to believe all its protestations of honesty as regards oil stock promotion it had better get on the job and stay on it. Also it would be wise were it to apply a rule of common sense to stocks sold from Fort Worth, as well as a rule of straight honesty.

Fort Worth suffered much in reputation from the scandalous stock promoting that started there in the Burkburnett and Ranger days and continued until the government intervened. All that time there was much criticism of Fort Worth and its citizens but they were getting the money and didn't seem to care. Efforts to arouse their Chamber of Commerce were of no avail. When the crash came, from government investigation, Fort Worth was amazed and angered and insisted that its "citizens" were honest, even including "Doc" Cook.

It took the most vigorous work by **outside** government attorneys before **outside** judges to get the crooks over the road. Crooks tried by local government counsel before **local** judges got off with ridiculously small fines and short jail sentences, nowhere commensurate with the damage done the public. Practically all the promoters thus sentenced must have been a vast amount of money ahead by the operation. It was a sad commentary on justice. More fraud cases are coming up in the near future in that same general territory and the public will watch their outcome with interest.

If Fort Worth wants to be taken at its word it must see to it that there is not only no dishonest stock promotion from that place but that such stock selling as is done is on an exceptionally high plane, most conservative, the kind that Fort Worth citizens themselves would put their last dollar in.

There has just come to my home address, by mail, a cheap flamboyant publication entitled, "Profit Guide and Financial Investor," published by the United Securities Exchange, from the 20th floor of the Farmers & Mechanics Bldg., Fort Worth. Possibly this publication and the outfit that runs it are every bit as honest as they loudly proclaim themselves to be; but, viewing it as a whole and noting a few points to it, one would not say it was the best kind of literature for Fort Worth to permit to be issued, if it would have the outside public take it at its word. This outfit is crowding pretty close to the line, to say the least. For instance, under their name they say "U. S. Licensed Investment Brokers." When did the United States begin to license brokers? Such a law has been urged but never enacted. If the "U. S." means something else, such as "United Securities" etc. then it is still of a highly undesirable character as being misleading to say the least.

Throughout the publication, there is much to criticise. True they urge you not to speculate unless you can afford it, but they use all the old "come-on" stuff of Doc Cook and the rest of them to get your money. Profits as high as "100 to 1" are suggested, long shot wildcats do not appear as quite so wild as they actually are. A grand and glorious stock proposition in old Mexico is offered with all the old time high-powered selling talk. Over on another page is an apology on how they returned the money to some "investors" in another Mexican deal which was discovered by the government and the National Vigilance Committee to be operated by crooks that had been run out of this country. All the time the United Securities crowd are telling the "nvestor" to investigate thoroughly and also what a "world-wide" organization they have and how "thoroughly" it runs things down. If it's all it claims to be one wonders how they happen to handle this bum Mexican deal. There is much else to criticize also.

A big institution that has made money. But possibly its stomach is as strong as it was during the north Texas excitement some years ago when it and its general manager permitted the latter's name to be connected as director with one of the cheapest, shysterish looking one-horse refinery promotion deals we have ever seen. We called attention to it at the time but didn't geet a peep out of the bank or company, nor was there any change in the directorate. We trust, for the good of Fort Worth and particularly for the pocket book of the public outside of Fort World, that it's not so hard boiled now.—W. C. P.

Man Superior To Surroundings

IT FREQUENTLY remains for an outsider to call attention to a general drift or tendency in a business or some other institution, which passes for the most part unnoticed by those directly in contact with that business because of their very closeness to it.

Max Bentley, a writer for Henry Ford's Dearborn Independent, in an article in a current issue mostly descriptive of the type of oil field worker found today in the Smackover field, expresses surprise at the change in the men and the oil field surroundings, as compared with his earlier experiences at Spindletop. He found the modern oil field workers bringing their families and making a home near the field. He found schools being established almost while derricks were being built. He found the orgies that made up a good part of oil field life fifteen or twenty years ago missing. "The modern oil field is more than a place where oil has been discovered. It is a melting pot of raw manhood and its brew today is orderliness and not orgies," he concludes.

Many of us have sensed the changes that so impressed this writer; but we have seen the various steps in the change. We have seen numberless executives, whose word is now law in a new producing district, grow out of and above the turmoil of the early days, with a firm purpose to see that those conditions were not repeated, or at least to a lesser degree than in the fields of their early experience.

Under analysis, the transition that Bentley points out is due to the growth and development of the business from a disorganized start to its present stage. As with any industry it builds its laws and code of ethics as it grows. What passed unquestioned in the early days would not be countenanced today. It is comparable to the development of civilization itself, and its like is to be found in the history of the growth and development of other industries.

In short it is likely that the troubles and problems that confront the oil industry today are nothing but growing pains. The oil business has had a tremendous and rapid growth to its present important status in world affairs, and all of it within the memory of some men in the business. The very rapidity of its development brings problems that tax the men in it to the utmost. But out of their wrestling with those problems will come recognized rules of practice and procedure that will guide its future conduct.—V. B. G.

Giving advice was practically amateur business until radio broadcasting started.

Most people can't comprehend that radio performers get paid for their work.

Alabama Consumption Figures Run High

CLEVELAND, April 26.—Alabama collected $96,334.68 in February in gasoline excise taxes at the rate of 2 cents a gallon. This indicates that consumption in the state amounted to 4,816,734 gallons, a daily average of 166,094 gallons or at the rate of 60,790,404 gallons for a year. February is a month of comparatively low consumption even in the south. In January NATIONAL PETROLEUM NEWS estimated the 1924 gasoline consumption in Alabama at 68,260,038 gallons.

Of the February gallonage, Standard Oil Co. of Kentucky had 1,886,840 gallons or 39.1 per cent, and the Wofford Oil Co. of Birmingham and its subsidiaries in the state had 1,020,537.5 gallons or 21.1 per cent. Gulf Refining Co. ranked third with 821,123.5 gallons or 17 per cent and The Texas Co. fourth with 570,014 gallons or 11.8 per cent.

Thus four companies sold 89 per cent of the gasoline consumed during the month in Alabama. The remaining 11 per cent was divided among 18 companies, 17 Independents and the Galena Signal Oil Co. of Texas which sold 5466 gallons. Of the Independents Sherrill Oil Co. of Pensacola, Fla., sold 88,629 gallons in Alabama; the General Oil Corp. of Birmingham, 85,942 gallons, and the Alabama Oil Co., operating at Albany, Florence, Gadsden, Huntsville and Sheffield, 68,202 gallons.

Figures for The Texas Co. contain gallonage distributed by three jobbers handling that company's products, and the figures for the Gulf two such companies.

New York Export Rate Is Up To Railroads

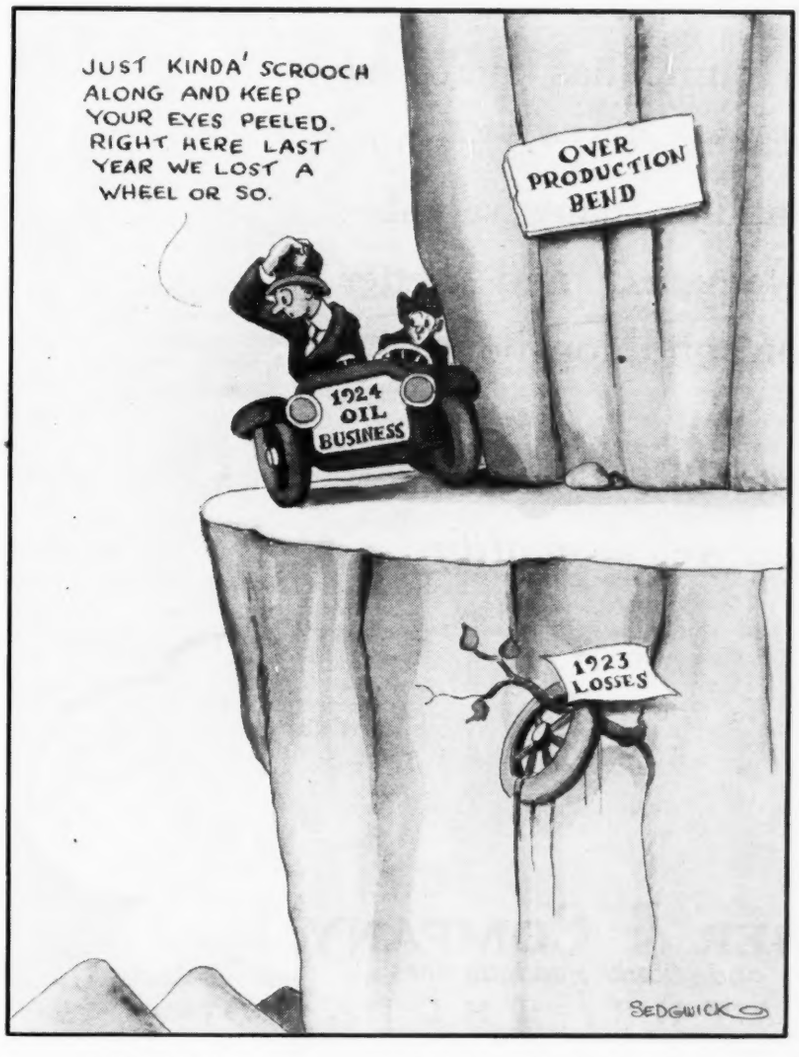
WASHINGTON, April 26.—An export freight rate on petroleum products from Robinson, Ill., or any other point in the country, for that matter, to New York or any other port, that would enable a given refiner to use New York as a point of export, in competition with New Orleans, the Interstate Commerce Commission has decided, is a matter of grace and not of right. A railroad may make such a competitive export freight rate, or it may decline to do so, without violating any law.

That position was made by the rate regulating body in a decision on No. 14520, Lincoln Oil Refining Co. vs. Big Four et al. The refining company alleged the domestic rate of 50.5 cents on petroleum and its products from Robinson, Ill., to New York, for export, was unreasonable to the extent it exceeded a rate of 31 cents on petroleum and its products, for export, from Robinson to New Orleans.

The complaining oil company, affiliated with an exporting organization using New York as its port of export, the commission said, desired to have a rate it could use for exports via New York, in competition with the traffic via New Orleans. The commission said no export rates via New York were in effect from East St. Louis, Roxana, or any other refining point in the St. Louis-Chicago territory.

It said it could not compel the railroads serving New York to make rates for export any less than the reasonable rates to New York on oil intended for use in this country. It said the Big Four, if it felt it should put its shippers in a position to export via New York in competition with New Orleans, had the right to make a rate of 31 cents but that the commission could not compel it to do so, because, among other things, it could not find that the rate of 50.5 cents was unreasonable for the service to be performed.

The decision was not unexpected by those who had kept in touch with decisions of the commission in cases brought in behalf of other commodities.


JUST KINDA' SCROOCH ALONG AND KEEP YOUR EYES PEELED. RIGHT HERE LAST YEAR WE LOST A WHEEL OR SO.
OVER PRODUCTION BEND
1924 OIL BUSINESS
1923 LOSSES
SEDGWICK

Good driving means watching the road ahead

Letters To The Editor

Sir: I would like to congratulate Mr. H. F. Brownell upon his address at the St. Louis convention as published in the April 16 issue of your magazine.

To my mind this is the best thing and contains more good hard sense than anything I have read in your magazine for the past two years, which is the length of time I have been a subscriber.

Especially do I sanction the part of the article in relation to tank wagon and refinery prices. If the so-called major companies and Independents could have a better mutual relation between themselves and use this method to establish the margin between the tank wagon price and the service station price, it seems to me that we would have made a great step forward in solving the petroleum situation and saving it from the hands of the politicians.

Allow me to say here that the oil industry wil have the Independents to deal with continuously and the sooner that relation is mutual with major companies the sooner the entire industry will be able to determine upon a fair margin both to themselves and to the consuming public.

(signed) C. E. Suttles
Perry County Oil Co., Marion, Ala.

BOWSER
ESTABLISHED 1885

In the Last 10 Years

economists show that general commodity prices have gone up 59.7%

In this same period, our Chief Sentry pump has increased in price exactly 4.3%—notwithstanding many valuable improvements, and better construction throughout.

The moral is: Bowser offers *value* as well as *quality.*

S.F. BOWSER & COMPANY, Inc.
Pump and Tank Headquarters
FORT WAYNE, INDIANA.
Sales and Service Offices and Representatives Everywhere

Four miles out of town good roads ended and the work began. Hero of this story thinking about tire chains

Selling Oil From The Seat Of A Truck

By Ward K. Halbert

STAFF REPRESENTATIVE

"IN ORDER to be a first-class tank wagon man, a fellow has to be a rare combination of oil man salesman and truck driver, and good ones are scarce," Charlie Huber said to me one day in Chicago, not suspecting that my next breath would bring a request for a formal introduction to his dean driver.

The request was granted, however, and arrangements made for me to be on hand the first day the dirt roads of Lake County would sustain the weight of a loaded 2½-ton Dodge truck.

We were loaded to the running boards with two and a half tons of petroleum shortly after sunrise, and a route laid out, much of which had not been traveled since the first thaw of the year. Every foot of it was well known to Tom Parker, the man in charge of the expedition. As a matter of fact he had plowed in several of the fields along the way, and in neighborly exchange of labor at harvest time he had worked on nearly all the farms we passed. His childhood home was two miles out of town, so he knew most of his customers by their first names.

When you have not seen a customer for six weeks it is a little hard to guess his requirements, but a previous knowledge of his machinery and the extent of his acres helps some. The tanks carried 350 gallons of gasoline and 150 gallons of kerosene, the gasoline divided in two compartments. On the starboard side the truck carried a 55-gallon drum of tractor oil and four 5-gallon cans containing 10 gallons of medium motor oil and as much "Ford Special." The port side carried a full drum of light motor oil, ten gallons of black engine oil in two cans and a spare tire. There were two pails in the up-stairs compartment of the bucket rack, 10 pounds of axle grease and 10 pounds of cup grease, besides some small empty cans.

The Lay of the Land

Before getting too deep into this story it ought to have a setting. So be it understood without further delay that Crown Point, Ind., is the base of operations, the "rail head" so to speak. And Crown Point is little else, being a town of less than 3500 people in 1920 and not much subsequent growth. But Lake is the richest county in the state, paying 14 per cent of Indiana's total taxes, and Crown Point is the county seat. The biggest pay roll in town is at the court house which stands in the middle of its Mid-Victorian square.

Close to where Main Street hooks up with the square there is a three-story bank with a fancy clock on it and the chimes in the ornate box break loose every 30 minutes with a melody which, by the way, is obviously cribbed from "Nearer My God to Thee", apropos of the industrial activity of the town. But for all that, Crown Point has a large country around it. Farms are small but

Serving the Prairie Farmer With Power

DO YOU look upon the tank truck driver as merely a delivery man? Wrong, if you do. He's as much of a salesman as the man who drives past him in a shiny roadster with a case of sample bottles at his feet.

He's a salesman whose biggest asset is Service, and the minor inconveniences he goes through to take care of his customers—if he's the right kind of a driver—would surprise a man used to doing business from a comfortable office chair.

Take a trip for a few moments out on the country roads, off the pavement, with Tom Parker. This story is really a page from his diary. Mr. Halbert earned the story before he wrote it, by working his way on the trip toting a five-gallon bucket—Editor.

A Lower Per Year Cost

Long after you have written them off the books at the usual depreciation rates—your Standard Super Tanks will still be serving as economically as when new.

Their annual maintenance costs you will find are more or less limited to the fixed charges incurred by all equipment, such as taxes, insurance, depreciation, etc.

Large repair charges will be noticeably absent. For Standard Tanks are made absolutely bottle-tight—and are *guaranteed* leak-proof.

Standard Super Tanks have been serving the oil industry—in fields, refineries and filling stations *at a lower per year cost* for more than seventeen years.

They are built in any size for any purpose with single, double or triple compartments. We also manufacture according to specifications. Write us your requirements and we will quote prices and delivery dates by return mail.

The Standard Boiler & Plate Iron Company

Niles, STANDARD TANKS Ohio

METRIC

One type of meter which includes gauge, flange, disc and connections for measurement of gas, air, steam, oil and water.

Think this over and write for Bulletin No. 116.

METRIC METAL WORKS, ERIE, PA.
of AMERICAN METER COMPANY INC.

METERS

every foot cultivated or grazed. Motor cargoes of garden truck and big white tank wagons full of milk speed through Crown Point hourly toward hungry Chicago, three hours hard driving to the northwest.

All these trucks, large and small, get their gasoline where they start out, and pumps around the square do not get much of their business. Gasoline gallonage with tourists is good in town however, especially if elopers are considered tourists. Official records show that an average of 20 couples ran away from Chicago and got married in Crown Point every business day in 1923, and most of them motored over. One of the most eminent bridegrooms was Rodolph Valentino.

But with regard to the town, it is too near Chicago ever to be a metropolis, and too far from it to be a suburb. So it is a railroad point where fast trains on the Erie and Pennsylvania lines stop if they happen to jump the track. It is a quiet spot where Standard Oil Co., and the U. S. Steel Corp., and some other good firms with plants in the north end of the county can retire to pay their taxes. But there is business out in the county for the oil man who goes after it.

Bucketed Whole Load

The first half-day out, everything had to be bucketed to storage, and some of it had to be carried a long distance by hand. Tom says it always has to be handled with a bucket but most of the marathon work can be cut out in dry weather. Almost invariably a farmer's storage is a drum, and there is no way to measure it accurately except to use a standard 5-gallon bucket. And even if there was a way to gage it, most of the barrels are on stands so high oil could not be run from the tank wagon by gravity.

In dry weather it is possible to run a tank wagon of any size to some point close to the farmer's storage, but in the early spring it can be done only at the risk of getting stuck in the mud. Law in this state requires farmers to place their oil storage a safe distance from any building, and that may mean an unreasonable distance from every drive way. This is a great time-killer for the tank wagon man, because he has to walk so far he can not leave one bucket to fill while he empties the other; he must alternately fill and empty with one bucket.

All heavy trucks "verboten" from Mr. Hoffman's private drive but he loads the mud boat at the end of the lane.

"Some of these farmers keep their drive ways nice and won't let you come on them with a truck", Tom related. "Others don't pay any attention to their drive ways and they get in such bad shape you don't dare drive on them. So I am lucky if I get to leave the main road before June."

Only One Pump

During that first half day's trip we did not see but one pump. It was about the farthest point of the tank wagon route, on a road intersection. We only left 75 gallons there, and several farmers had taken more than that. The establishment was a cheap place of amusement, a pop stand, cigar counter and dance hall, all in one. Business had been dull all during Lent, according to the woman in charge.

But the farmers were buying and buying in good volume. They were not confining their purchases to gasoline either. Not all farmers who have automobiles have tractors, but the tractor is becoming yearly more nearly universal, and tractor time is now at hand. Although we started the day's work with half as much kerosene as gasoline the kerosene tank was empty first.

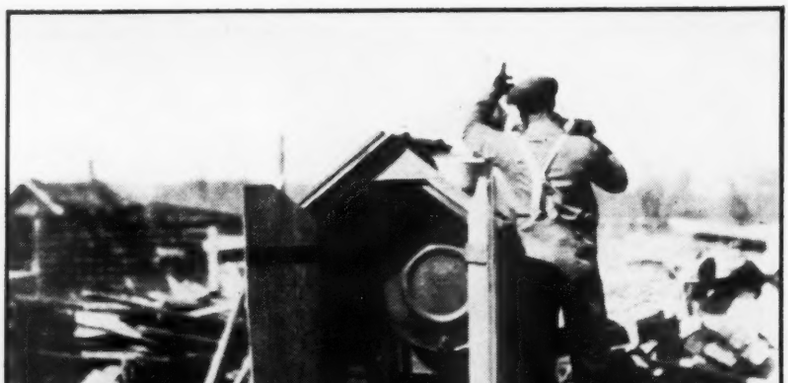
We made good speed for the first four miles. The road was a hard surfaced state highway. Tom worked his horn pretty vigorously. Wherever there was sign of human life he turned on the Claxon. To an uninterested party this might have appeared simply a social matter, a way of saying "howdy" to a friend on a disc harrow at the back of the field or to some housewife in the back yard puttering with the chickens, but it was pure business, as I learned later. Tom wanted to know if he was observed. If the person saw him and made no effort to flag him down the sign was "high ball" and the truck did not stop.

On the other hand if the farmer or the farmer's wife saw the truck and wanted oil, it was easy to get. The husky hand of the granger, looking as big as a sacked ham in a few white canvas glove, though the farmer was on the back side of a section of land, could stop the truck with one quick downward motion. A waving white apron at the henhouse door meant the same thing. Tom never missed a "drop signal". The first one came just before we reached the end of the paved road. We approached the farm house and nobody was in sight; Tom set up a din with the horn. Instantly up came a white glove from among the bee hives in the low corner of the orchard, and then quickly down again. Tom applied the brakes.

Cruise in Mud Boat

"We can't drive up this lane. I will turn around while he is getting down here with the boat" said my skipper. "Looking at the water in the lane, the boat joke sounded pretty good, but it was not a joke at all. Pretty soon out from the barn fared the lord of many acres, driving a sleek black horse to a crude sled, which the prairie farmers call a "mud boat". It brought all the farmer's empty storage which Tom filled and collected for in real money By way of local sidelight farmers in this vicinity

This is an old tank cart used by farmer to take tractor fuel to the field. He has a new one and uses this for storage.



Some progressive farmers have shelters for their gasoline to protect it from sun, collision, matches and theft.

pay cash as a rule. They are not one-crop farmers who pay everything once a year like so many southern planters and western ranchers.

On this particular sale Tom delivered 50 gallons of kerosene, filled two milk cans with gasoline and one with lube oil. He was careful to fill one can from one truck compartment and one from the other. "What are you doing Parker, balancing your load?" asked the farmer. "No, I started with both sections of my tank full and by the time I've been in the sun another half hour they will be running over" he replied.

"How did you like that kerosene you got last week?"

"Oh, I guess I can't kick on it. We tried to burn some of it in the kitchen lamp and it smelled like the devil, but it made good light."

"Well now Mr. Hoffman" said Tom with a tilt of the eyebrow that would have done credit to a petroleum chemist, "oil don't have to smell bad to burn good I am leaving you better lamp oil than that, and can take some of that off your hands if you say so. That was some special incubator kerosene we had, and it is fine for incubators, but this is better for lamps."

"Never mind" said the farmer, "there is not enough of it left to amount to anything. I put it in the engine to do a day's grinding, so it's about all gone. It worked all right in the engine too."

Before stopping again we passed through a small village. A young man was grading a ditch by the roadside preparatory to laying some drainage tile. Tom halted, opened the cab door and shut off his engine. "Oughtn't you to be sowing oats, Chester?"

"No, it's too wet today yet. Did you bring dad that barrel of tractor oil?"

"This is it here on the side. Where does he want it?"

"You will find him up around the house. He will show you."

"Can I go on your drive? I've got a pretty good load."

"It will hold you. I was over it with the Hudson yesterday."

After unloading the drum of tractor oil and delivering 50 gallons of gasoline, Tom started a sales campaign for other items in the line, not a vigorous one at all, but selling just the same.

"You haven't used much kerosene" he observed, shaking drum number two. "When will you be wanting some more?"

"Monday morning I figure."

"All right, Monday morning it will be. And how about some axle grease? Sure I've got it with me! You might as well take it all, you will use 10 pounds before the summer is gone. Sure. Do you want it all on the same bill? That's not necessary at all, I can receipt the bill right here if you rather pay cash."

Silence Gives Consent

At the next farm house Tom applied the horn but could not raise the natives. Without any sign from anybody he turned in on the lot, backed up to the tool house and halted, still no sign from anybody. After lifting a white wooly pup safely over a poultry wire fence out of the way he gauged the kerosene drum with a nearby axe handle. It was just at this stage of the game that a female form appeared in the back door.

She: "Art never said he wanted any coal oil and I don't know if you better leave any without him saying so. And he never left me any money to pay for it with, and he won't be home 'til late. He's running a disc over in the hill field."

He: "That's all right Mrs. Hayney. Art prob'ly went off to work and forgot about it. If he's cutting stalks in the hill field he will be plowing this week, and there is about enough kerosene here to fill a lamp. Besides it looks like rain and if I pass here without filling his tank and then it rains and I can't get back again, he will *sure* make it hard for me."

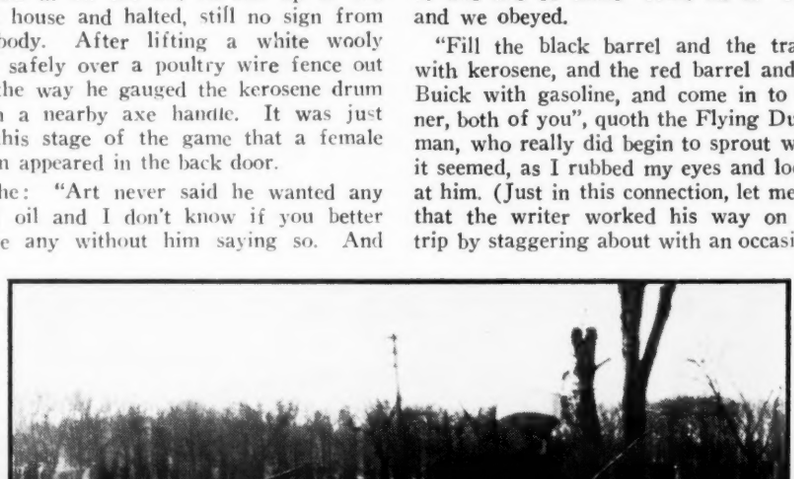
Overruled, Mrs. Hayney dropped out of the picture by slamming the door. "Her health aint the best", Tom ventured in her behalf as he proceeded to fill the controverted drum.

The next stop was to fill a red-belted 5-gallon tin can that sat on two bricks by the roadside in front of a small cottage. "You wouldn't think it, but this is a good customer," said Tom. "He is a city guy; moved out here to farm a while, but he didn't do much good last year. He kept a Ford though and always sets this can out here for gasoline. He pays when I see him. Some of the other drivers sniffed at his can and wouldn't stop for him, but I took care of him mostly for accommodation. Now he's got a tractor and I'm getting all his business."

Lunch for a "Man"

It was 11:30 a. m. when we halted and honked at an open gate 500 yards from a big red barn surrounded by a lot full of machinery, momentarily idle. "This is the Flying Dutchman's place" Tom announced. "I won't get on his drive without orders". But the signal came with a big white glove. It was one of those "come on in" signs, and we obeyed.

"Fill the black barrel and the tractor with kerosene, and the red barrel and the Buick with gasoline, and come in to dinner, both of you", quoth the Flying Dutchman, who really did begin to sprout wings it seemed, as I rubbed my eyes and looked at him. (Just in this connection, let me say that the writer worked his way on this trip by staggering about with an occasional



Almost any farmer can accept a 100-gallon dump of kerosene at the first visit of the oil man in the spring.

5-gallon bucket of oil, and it is a great thing to whet an appetite).

The machinery in the lot was mostly corn shredder. A crew of eight to a dozen men were sprawled about on the grass, enjoying their lunch hour. The lady of the house (Mrs. F. D.) had a meal on the table that passes description. It was made first to meet the needs of several hard working men—but they were men who *were* her neighbors and the friends of her husband, members of his ring, exchanging work. So they were guests as well as workmen, and the fare was fine.

Among the crew Tom had four customers. Before he left he had talked with each one of them and made an appointment. In every case the men reported their roads too soft for truck transportation but estimated when they thought it could be navigated and asked for attention. At no time on the whole trip did I see Tom make any notes. Always he seemed to remember when last he called on any customer, and when he ought to call again.

Whether it is the money value or the sentimental value of a clean dry drive from the road to the house, makes no difference, but every farmer who has one is almost sensitive about it. This very Flying Dutchman told me that an oil man from another town had been to his place that morning but he had bought nothing of his, because he pulled in on the drive way without asking if it was all right. The drive, he said, was built of cinders and chat and would not carry heavy traffic when wet, so he did not like trucks to drive in without permission.

No Knocks from Him

The first halt after noon was in the barn lot of a prosperous farmer. He had a neat little house built for his oil storage with half the roof on hinges. But the farmer was irate personally, because of the failure of some lubricating oil, bought elsewhere, to perform in a manner that satisfied him.

"I want five gallons of the best oil you have for tractors" he said. "This stuff I bought off of ..... is no good."

"What's the matter with it?" asked Tom, when most anybody would have been tempted to agree with the buyer.

"It's as thin as kerosene and it's only three days old."

"Now Henry," the alert Tom began, "I am glad to sell you this oil, and I know nobody can offer you anything better, but I don't want you to run it three days in a tractor without changing or putting in any fresh oil. That stuff you bought from ..... is good oil. It ought to keep your tractor running good if you use it right. Of course tractors get hot plowing and oil is expensive, but it is cheaper than buying a new tractor. Just because somebody says his oil will run a week without changing in a tractor, don't you try it. The fellow that sold you that truck there probably said it would hold up a box car, but you wouldn't load one on it."

It was only a little while after this that we reached the rural amusement hall and filled an underground tank with gasoline. Inside we sat on high stools and drank

(Continued on page 63)

The Tide Water Refinery of Bayonne, N. J.

The Story of Tide Water Oil

Number one of a series.

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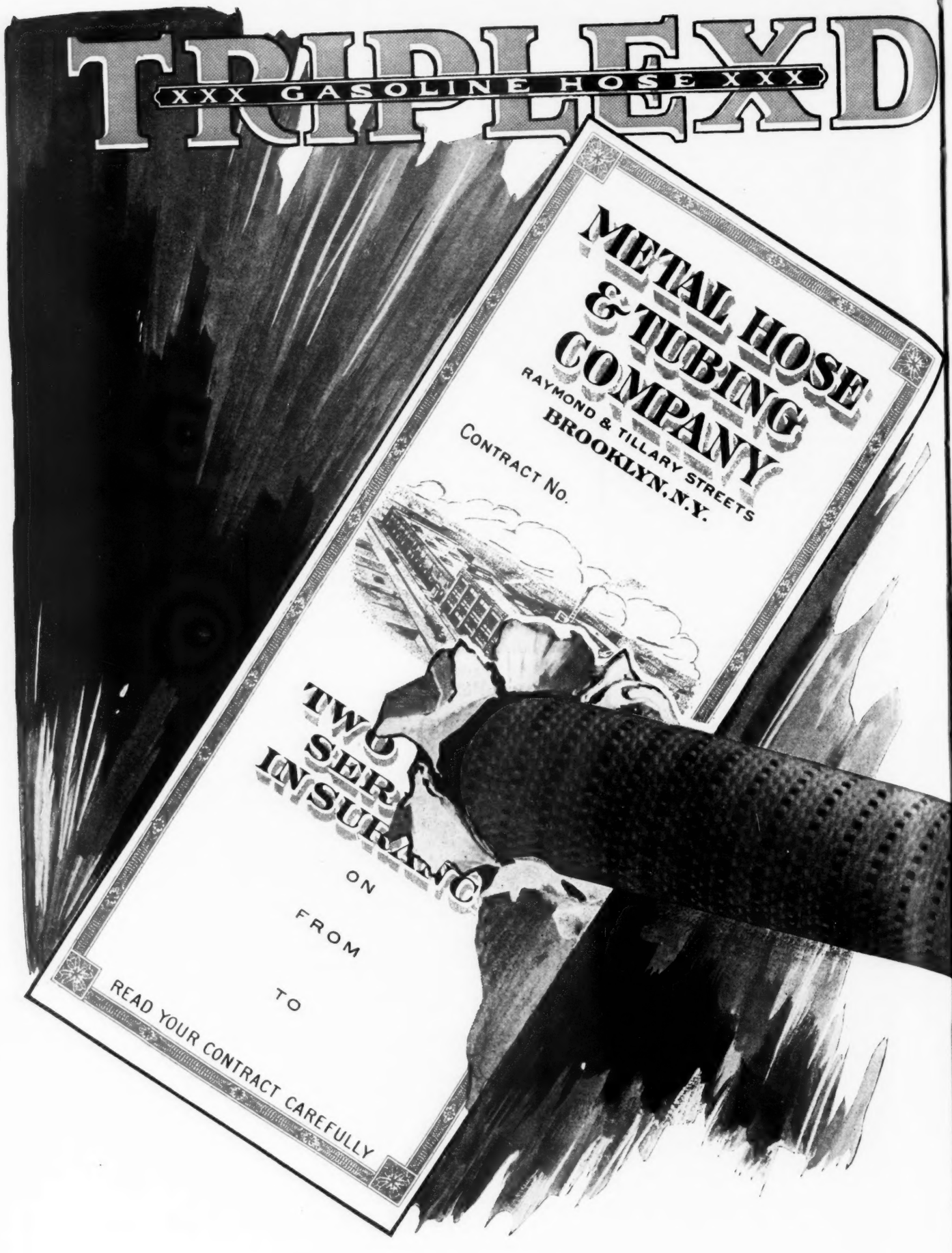
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Threatened Regulation Of Oil Concerns Landowner Most, Says Marland

By Paul Wagner

STAFF REPRESENTATIVE

SAN FRANCISCO, April 26

THE American petroleum industry, in the 60-odd years of its existence, has sold its raw material for $4,900,000,000 less than it cost the producing branch to drill the wells and lift the oil.

Within a similar term of years, as computed on the basis of federal statistics, the citizen landowners in the states where oil is produced have received net royalty payments of $4,100,000,000.

These figures are given by E. W. Marland, head of the Mid-Continent oil company that bears his name, as a background for the statement that there exists an interesting phase of the petroleum situation that he has never seen touched upon before.

This phase, Mr. Marland said before leaving California last week to return to Ponca City, has to do with the ownership of oil below ground and the conditions under which it is, and may be, recovered; especially, he holds, as regards the tendency of the times and the lack of understanding outside the industry of the situation confronting it within.

Rule by Non-Owners

Of the 48 states comprising the Union 16 are cited by Mr. Marland as oil producing, three of them giving up the greater volume of oil recovered at present. Thirty-two states are non-productive of oil. These 32 states, he says, through their tendency toward regulation of the petroleum industry, are in effect attempting to say to the landowning citizens of the other 16 what their "crop" of oil shall bring.

Mr. Marland uses the term "crop of oil" literally. He takes the position that oil is the vested property of the landowning citizen under whose ground it has accumulated, provided, of course, that it is reduced to possession. It is as much a crop to the citizen landowner, he feels, as the farmer's cotton, his wheat or his corn.

The fact that the citizen landowner does not harvest his own "crop" of petroleum, but instead turns over this function to the producing branch of a great industry, changes not one whit the point that Mr. Marland would like to get over to the public.

The "crop" is none the less actual, as indicated in the payment of royalties, computed on a basis of one-eighth of the whole, totaling more than four billion dollars in the last 60 years. Nor have the profits of the industry represented what the socialistically inclined would have them considered, as shown by the figures indicating the marketing of the industry's raw materials supply at nearly five billion dollars less than it cost to drill the wells and lift the oil.

Socialists Seek Entering Wedge

It is pointed out that socialistic groups and politicians are using as an entering wedge to a sought-after community of interest in the oil industry the disclosures at Washington and a hangover feeling that has existed over several years against industrial strength as represented in the name Standard Oil.

Such an entering wedge is possible because socialistic doctrines have their appeal in parts of the country that do not exclude even the farming communities. Mr. Marland did not mention it, but another oil executive pointed out to the writer the other day that Governor Bryan of Nebraska has called a conference for the expressed purpose of developing a minimum market price of $1 a bushel for wheat, which is identically the opposite position to that taken by this same governor with regard to the sales of petroleum products within that commonwealth.

The petroleum industry hasn't asked for a community of interest in the coal, the cotton, the copper and the wheat of the country, nor of a myriad of other commodities, Mr. Marland points out. All these have advanced very much more above the price standard of 1913, some of them as high as several hundred per cent, as contrasted with increases in the selling prices of gasoline. The latter have been confined to 10 to 12 per cent.

Production Costs Greater

Into the producing costs of the petroleum industry, and these may be extended also to the marketing and distributing branches, there have come increased expenses for equipment, for labor, for all those things that constitute the cycle from the reduction of crude oil to possession on through its various refinements until it reaches the ultimate consumer.

Notwithstanding these increased costs of production, refining and marketing the advanced sales price of gasoline represented in 10 to 12 per cent are moderate in comparison with other commodities, it is set up; and were it possible to cite detailed figures in this connection, the writer submits that the net return to the industry probably is less today than it was previously in the history of the petroleum industry.

The limitation of prices, as proposed by a group of state attorneys general at Minneapolis last year and since recommended at a meeting in Chicago in March, appeals to Mr. Marland as striking at the value in the ground of the oil which when reduced to possession becomes the "crop" of the citizen landowner and his "tenants," otherwise the producing branch of the oil industry.

Bonuses paid to the landowner for less form no part of the producing costs cited by Mr. Marland for the reason that their varying character in different fields and under different conditions makes it impossible to set up figures that would indicate accurately what they represent in terms of total return to the fee-holder; but royalties paid, except in the comparatively small percentage where they exceed the usual one-eighth, are closely determinable.

Mr. Marland pointedly takes the position that it is unfair to say what the citizen landowner's "crop" of oil shall sell at and to allow the costs of lumber, steel, labor and other things to mount to higher peaks or to be irregular.

"Who needs to make this fight?" he asks, in directing his attention against tendencies of the times.

Then, he answers his own question thus:

"It shouldn't be merely the oil man's fight, but it should be that of the cit-

---

MR. MARLAND'S comparison of oil deposits under a farmer's land to crops of wheat, cotton or anything that may be grown, will probably meet diverging views even within the oil industry. But, taking the view that oil cannot be called a crop because it cannot be duplicated when once extracted or "harvested", one can see all the greater reason why the price should not be regulated from without the industry, regulated by factions or interests with selfish motives who wish to get something for nothing or a little more than nothing, at least for a price below the cost of production. As Mr. Marland suggests the citizen landowner will be the one to suffer most in any price regulation as production royalties will suffer proportionately with the oil industry in any effort to tamper with the natural regulatory laws of economics. —Editor.

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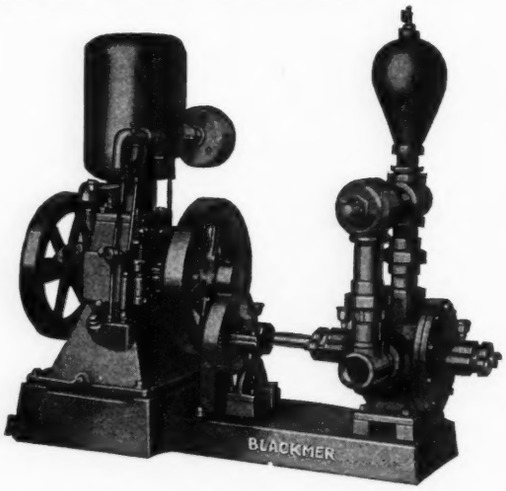

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izen landowner as well. Once get communism in one industry and the North Dakota farmer may find the tendency toward a community of interest in his wheat crop."

In one sense, Mr. Marland views the situation as one which isn't the oil man's fight at all. Were the price of petroleum products to be regulated, which is recognized as a tendency rather than a thing actually in sight, the oil man must needs adjust his conditions to the changed order of things.

Regulation, the writer believes, would be a calamity to the Independent industry to even a greater extent than it would hamper what may be broadly referred to as the major interests; but, as Mr. Marland suggests, with regulation the oil man would be confronted with adjusting conditions to the changed order of things and with that adjustment would come reaction against the market value of the citizen landowner's "crop" of oil.

Will Develop Own Properties

Mr. Marland's visit to the Pacific Coast was his first since the recent formation of the Marland Oil Co. of California, as a subsidiary of the Marland Oil Co. of Delaware. He took occasion on this trip, which included a visit to the Marland offices at Denver, to announce that the California subsidiary, in charge of Col. Franklin R. Kenney as president, had no intention of purchasing properties of any existing company; it would not attempt to increase refining and marketing facilities on the Pacific Coast; but, in his own words:

"We are here to find oil, to pioneer for it. We are not confining our search to any locality or localities. Our geologists are to inspect every valley of California for oil. As compared with our flat lands of Oklahoma and Texas, California possesses many favorable characteristics for potential oil development and production.

"Understand clearly that we have no intention of marketing that oil which we shall produce direct to consumers in California, but to those established companies and agencies already operating in the distribution of petroleum and its products. Whatever surplus above the growing demand in California that we shall produce will be readily taken on the Atlantic Seaboard."

Mr. Marland did not discuss the operating policy to be pursued by the new subsidiaries formed by him under the corporate names of the Marland Oil Co. of Texas and the Marland Oil Co. of Colorado, with Dallas and Denver offices, respectively; but the announced intention of the California subsidiary's confining itself to the producing branch of the industry, is regarded as indicative of the general policy to be pursued elsewhere than in Oklahoma, where the Marland refinery is rated at approximately 15,000 barrels crude capacity daily.

The Marland Oil Co. of Delaware, in which J. P. Morgan & Co., recently

became interested through purchase and option on several hundred thousand shares of previously unissued stock, has been an extensive seller of crude oil delivered into Mid-Continent pipeline facilities of subsidiaries of the Standard Oil Co. of New Jersey, for the account of the latter.

Selling Gasoline To Farmers

(Continued from page 57)

a bottle of red pop each while Tom figured up what he had left in his tank. After thumbing over his tickets he asserted he was going straight back to town the nearest way and work the rest of the route of the other end. "We have only about 10 gallons of kerosene left" he said, "and we will drop this gasoline in two dumps if we are lucky."

It was 2:30 p. m. when we pulled up at headquarters empty. Tom had carefully kept his hand off the horn when passing farm houses on the return trip. The wagon was light and the tank high behind. The initial formality after entering the warehouse yard was to examine a certain important black drum. It is used in the office of the Crown Point Oil Co., for a blackboard. It bore the chalked inscription, "Widow Barnes north of tracks hurry up kerosene." While filling one of the small compartments of the truck with oil for Mrs. Barnes, a telephone message brought an S. O. S. from a garage in Shelby, a village on the railroad 18 miles away.

At the Barnes home we encountered a rare calamity. The lady had bought a new barrel from a hardware man. He had just emptied it of dark lubricating oil. In an effort to clean it, she had poured a teakettle of hot water into it and could get out neither the oil nor the water. Tom washed it carefully with kerosene and made a small delivery. "You can't clean it perfectly madam," he discoursed, "and your lamp is sure to smoke some, using oil from a dirty barrel, but don't blame the oil, it will be all right after a few fills."

As we started out for Shelby to serve the garage man in distress, Tom told why it was necessary to be more careful with kerosene than with gasoline.

"A fellow seldom sees the gasoline he burns, and he hardly ever smells it. It goes into his car in 10-gallon lots and if it works it is all right, but kerosene gives us the trouble. If it is used in a tractor, it is the same as gasoline to the customer, but if it goes into a lamp the whole family takes a look at it. If it is off color it causes remarks. If it smells a little it is right in a closed room and makes the whole family sick. The boss has a good grade of oil coming regular on contract, but he picked up a car in the open market about a month ago that smelled, and we have had a hard time overcoming the effects of it."

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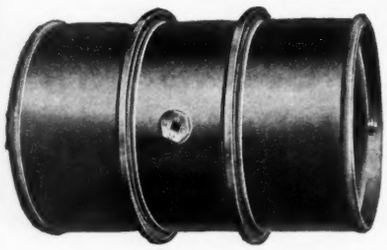

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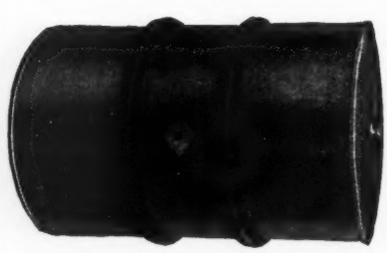

I'LL bet I can hold Your Business.

OLD MAN OIL
(Himself)

New Oil Station Construction

FOND DU LAC, WIS., April 24.—The Wadhams Oil Co. is erecting a $14,000 filling station here. It will be of brick and Japanese design. Trees and shrubbery will be planted on the site. Four gasoline pumps will be installed.

* * *

ISHPEMING, MICH., April 25.—Sinclair Oil Co. will build a service station here, work to commence immediately.

* * *

LA CROSSE, WIS., April 24.—Standard Oil Co. of Indiana has made application for a permit to build a filling station here.

* * *

SWEET SPRINGS, MO., April 25.—John Hicklin has just completed his filling station of brick and stucco. Mr. Hicklin and son are owners and managers.

* * *

BELLAIRE, O., April 24.—William Phillips, Jr., recently opened his second filling station here. Flowers were given on the opening day to women, cigars for the men and candy for the children. About 1000 people were served during that day.

* * *

LA PORTE, IND., April 24.—A drive-in filling station has been built here for the Roxana Petroleum Co. A. F. Prellnitz is manager of the station.

* * *

HUNTINGBURG, IND., April 25.—National Refining Co. has recently built a filling station here. Gasoline tanks have also been installed.

* * *

SPRINGFIELD, ILL., April 24.—A petition was filed here by T. L. Irwin for the erection of a filling station in this city.

* * *

INDIANAPOLIS, IND., April 25.—Sinclair Refining Co. and Standard Oil Co. of Indiana are building service stations here.

* * *

OLATHE, KANS., April 24.—Ralph Jessup has purchased the service station here from his brother Earl Jessup.

* * *

STEPHENVILLE, TEX., April 25.—Landers Bros. are building a drive-in filling station at Bluff Dale. A general line of garage supplies and other accessories will be handled.

* * *

WINDSOR, ILL., April 25.—Smith Oil Co. will erect two tanks here to take care of its wholesale business.

HILLSBORO, TEX., April 24.—A concrete and brick filling station will be built here for The Texas Co.

* * *

DODGE CITY, KAN., April 25.—The Sinclair Refining Co. has purchased a location here on which it will build a filling station.

* * *

CEDAR RAPIDS, IA., April 25.—The Manhattan Oil Co. recently opened its new service station here. Each customer was given a clothes brush, and candy and souvenirs were given to the ladies and children on the opening day. The company operates over 100 stations throughout Iowa, Nebraska, Missouri and Kansas.

* * *

GLENWOOD, IA., April 25.—An attractive service station of stucco is being built here next to the Raymond garage. Mr. Raymond expects to manage the station in connection with his garage.

* * *

CHARITON, IA., April 24.—A site located at an advantageous corner here has been purchased recently by the Standard Oil Co. of Indiana, on which it may build a filling station.

* * *

WINNER, S. D., April 25.—J. P. Andersen has purchased a corner lot on which he expects to erect a drive-in service station. Construction is expected to begin immediately.

* * *

NEVADA, IA., April 25.—Standard Oil Co. of Indiana has let the contract for the construction of its new filling station here, which will begin about May 1.

* * *

MARQUETTE, MICH., April 24.—W. J. DesJardin will build a brick stucco service station and install storage tanks and warehouse here immediately.

* * *

PAULS VALLEY, OKLA., April 25.—The Marland Refining Co., of Ponca City expects to begin construction of a filling station here in the near future.

* * *

MAGNOLIA, ARK., April 24.—Webb & Shipley are installing a service station here in connection with their garage.

* * *

ADA, MINN., April 24.—A modern service station is being erected here by the Larson Motor Co.

* * *

ATHENS, TEX., April 25.—A. F. Wood has purchased a site here on which he expects to erect an up-to-date filling station of the latest design. Station will contain office space also.

Making The Refinery Show A Profit By Reducing Operating Costs

By Paul Truesdell

STAFF REPRESENTATIVE

Article 5— Actual Savings Made By Tower Operation

CLEVELAND, April 25.

KILLING two birds with one stone is a good example of high efficiency. Killing one bird with one stone is a very good batting average, but one doesn't have to be very quick at figures to see that if two men spend a day killing birds, one at the rate of two per stone and the other at the rate of one per stone, the former will have twice as much game at the end of the day.

The man who can only kill one bird with two stones may get by if the birds are plentiful and the rocks abundant and his arm holds out, but he is generally going to have slim picking against the more expert rock throwers. He may have to eat beans instead of birds for supper.

Let's consider barrels of crude in the light of birds and British thermal units as the stones. The refiner who distills a barrel of crude with half as many British thermal units as his neighbor, or two barrels with the same number, is just like the man who kills more birds with fewer stones.

The comparison isn't perfect at that, because in the case of the man throwing stones at the birds it is simply a matter of saving the wear and tear on his good right arm while with the refiner it is a question of saving money. And British thermal units cost good money while rocks are free for picking them up. The more heat units a refiner uses to distill a given amount of oil as compared with his competitors, the more handicapped he is in selling his products in competition with theirs and making a living profit.

Studying Fractionating Towers

Some of the best refinery operating men in the business are studying this question of cutting down refining costs and most of them believe that outside of actual efficient burning of fuel under stills and boilers, stopping air leaks and taking similar precautions, the greatest room for improvement in efficient use of fuel is in the development of the fractionating tower to a point where it will do the greatest possible amount of work.

Some of these refinery experts believe that within the next two or three years, very likely 50 per cent of the work now done by stills will be performed by fractionating towers, and in certain plants great strides have already been made toward this goal. And as new plants are constructed or old ones remodeled it is altogether likely that towers designed in line with the latest practice will be put in rather than a larger number of stills.

Savings from the use of towers come from five major sources:

1—Installations involve less first cost than still installations, and take up less room.

2—Increased throughput per battery is made possible through the increased firing rate of the stills which towers will permit.

3—Less fuel is used to pump water to the condenser boxes and then to cool the water through spray nozzles and similar equipment.

4—Better separation of the cuts is accomplished, meaning elimination of re-running. Re-running is an example of using two stones to kill one bird.

5—Heat extracted from the vapors to effect their condensation is utilized to heat charging stock on its way to the still and to re-run distillate, thus saving fuel.

> This is probably the first time that working drawings of efficient fractionating and re-running towers have ever been published for the general benefit of the refining industry. There are no patents on the towers shown herewith, which have been proved exceedingly efficient.
>
> From these drawings any refiner could have similar towers built for his own plant. Two-tower installations, it is estimated, would cost about $5,000 per still or single tower installation, with towers of this type, around $2,000 to $2,500.—Editor.

How They Help

Towers increase the efficiency of a still battery whether the stills are run on the batch or on the continuous plan. One tower to a still is better than no tower at all but the best efficiency is obtained when two towers to a still are used, although, of course, the investment is greater. Insulated towers are necessary for the best efficiency. In such installation, where the process is continuous, a stream of crude or charging stock of the same character as that in each still, is pumped cold into the top of the first tower where it helps to condense the heavy ends of the vapors by absorbing some of the heat, which it carries into the still along with the condensed heavy fractions of the vapor through the reflux line. The batch system is little used for light oil distillation.

In the second tower of a two-tower installation, a distillate to be re-run can be pumped in at the top, the action of the vapors taking off the lightest portions of the distillate overhead and leaving a completely-refined heavier product to pass from the bottom of the tower to the tail house.

A Good Example

An example of the increased throughput and increased efficiency that comes from the use of towers is found in a certain Mid-Continent refinery. This refinery had a battery of 10 stills with a capacity of 500 barrels a day each when operating on the continuous system. Any attempt to increase this throughput by harder firing would have resulted in carrying over considerable of the heavy ends so that all the gasoline would have had to be re-run in order to give it the proper end point.

A new man took charge of the operations. His problem was to enlarge the output of the plant as much as possible without spending any money to speak of for new equipment.

To put in more stills was too expensive a proposition so his opportunity to make a good showing narrowed down to the basis of making the equipment he had do more work. He installed two towers on each still, and they did not represent by any means the latest practice in tower construction either.

One Tower Insulated

One tower on each still is an insulated cylinder about 22 feet high and four feet in diameter, and the other is just a nest of vertical coils of two-inch pipe about 12 feet high, enclosed in sheet steel doors.

All the fractioning action takes place in the first tower, the second being merely an aerial condenser, chiefly air-cooled, although water nozzles are provided for cooling the coils in very hot weather.

In this installation, crude or material corresponding to the charging stock in each still is sprayed into the top of the tower of that still. The vapors from the still pass into the bottom of the tower and in rising meet the shower of

(Continued on page 71)

Have You Seen
His grip is packed with new ideas for increasing your sales!
SKELLY OIL CO.
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El Dorado,

cold oil. The cold oil reduces the temperature of the vapors to the condensation point of the heavy ends, and carries the condensate for reflux along on its course into the still. This tower is fitted with several baffles and the space between the topmost one and the roof of the tower, about three feet, is filled with broken fire brick.

From the top of the first tower, the vapors pass into the bottom of the second tower, or radiator. Circulating through the coils, in ordinary weather, the vapors are condensed by air cooling, passing into the tail house direct without going through the water-cooled condenser at all, thereby relieving the boiler plant of a considerable part of its load.

In a case like this, where the fullest conservation and use of heat is not practicable, or involves too expensive air installation it is cheaper to dissipate the heat through air cooling, which is free, than with water that costs money to pump and to cool.

Doubles Battery's Capacity

The result of the addition of towers to this battery of stills is that the battery is now running consistently 10,000 barrels a day, day in and day out, just double its former capacity, and not a bit of the gasoline is re-run. And the tower installation of the whole battery probably did not cost more than $15,000 at the outside—not much more than the installed cost of one additional still.

Another example of the superior results that can be obtained at small cost with fractionating towers, is found in another Mid-Continent plant. This refinery has a cracking plant the pressure distillate from which was being re-run on the batch system in an ordinary battery of stills. Four small towers, too small to give the maximum efficiency, had been erected in connection with this still battery but had never been connected up for use.

Operating on the batch system, the plant was getting a recovery of 37 per cent of gasoline from the pressure distillate, and most of this had to be re-run to bring it to the proper end point.

In order to get the plant running more efficiently with a minimum immediate expense and in the quickest possible time, the re-run stills were changed to semi-continuous operation. The vapor lines from the stills were connected up to the small towers, which were uninsulated, and re-circulating pumps installed.

Semi-Continuous Operation

The stills, under the new operating system, were started each charged with 600 barrels of stock. As the gasoline began to come over, the pumps began throwing a stream of cold pressure distillate into the top of each tower. The pumping of the oil into the tower was synchronized with the evaporation rate of the crude from the still, about 25 barrels an hour. This, of course, was to prevent the stills from filling up.

The cold benzine, meeting the hot vapors, was partly distilled in the towers. That is, the lighter portions of the cold distillate, having a boiling point the same as the boiling point of the light vapors, were vaporized and carried over, while the heavy part of the distillate helped to condense the heavier ends of the vapors and knock them back into the still.

The results obtained were that runs were increased from about 550 barrels

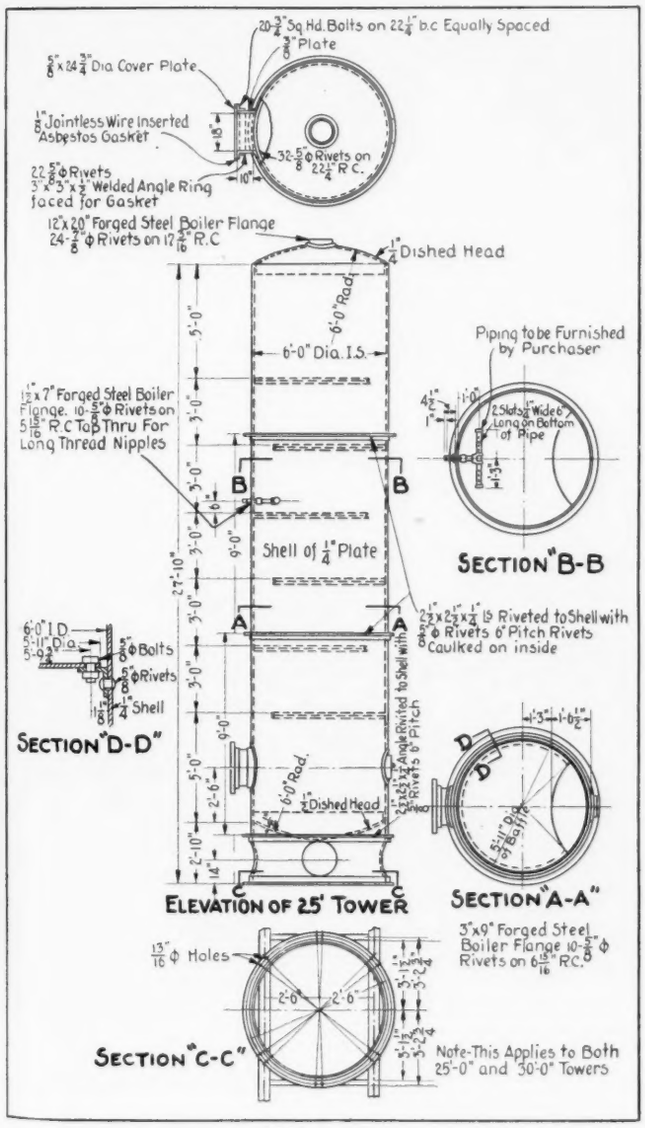


Figure 2

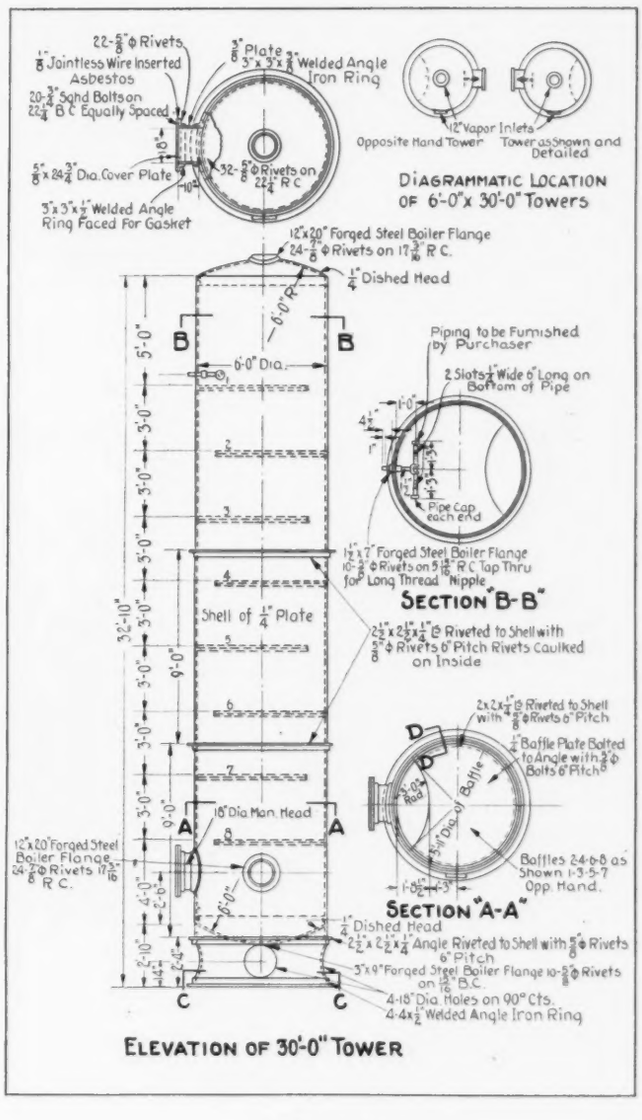
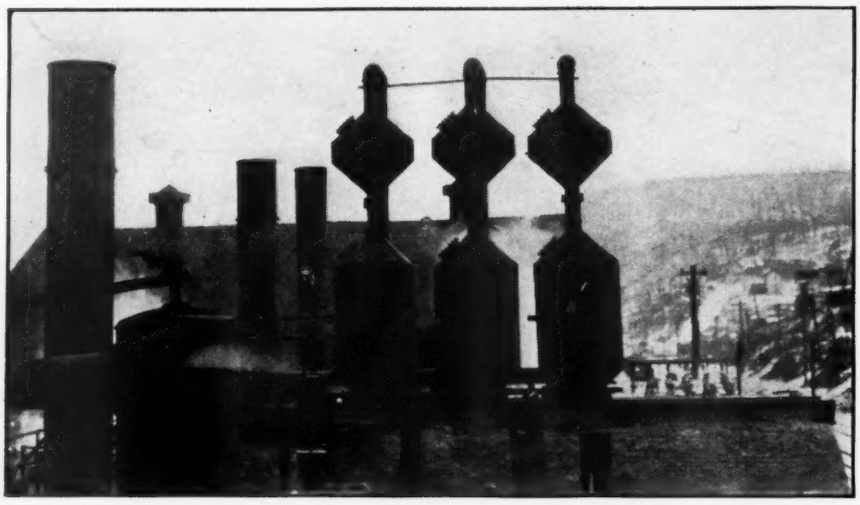

DIAGRAMMATIC LOCATION OF 6'-0" x 30'-0" Towers
ELEVATION OF 30'-0" TOWER
SECTION "B-B"
SECTION "A-A"
Shell of 1/4" Plate
6'-0" Dia.
Piping to be Furnished by Purchaser
Baffles 24-6-8 as Shown 1-3-5-7 Opp. Hand.

Figure 1



Small towers used on a still at a western Pennsylvania refinery.

per still for a 24 hour cycle to nearly 900 barrels a day, about 400 barrels of distillate being pumped into the tower during the run.

With this method of operation, the temperature of the still is very gradually increased as the gravity of the stream decreases. When the end point of the gasoline reaches the allowable limit, pumping in of raw stock over the tower is stopped and the liquid remaining in the still is reduced, making a benzine and kerosene cut similar to batch operation.

Gasoline Yield Increased

With this method the recovery of gasoline was increased to 44.5 per cent. This was regarded, however, as merely one step in advance of batch distillation and was only used until the stills could be connected up for complete continuous operation. When this was done, operating on pressure distillate, Navy gasoline was obtained from the first three stills and a recirculating stock from the fourth. This recirculating stock was pumped from the run-down tank over the towers on the first three stills and was responsible for maintaining the Navy endpoint on the first three streams.

That is to say, what would have been an unfinished product from the fourth still was re-run in the towers of the first three stills. This not only had the advantage of reducing re-running costs but of producing a larger yield of better products from the first three stills. This method of operation increased the yield of gasoline from the pressure distillate to 55 per cent. This at a saving of about one-third in the fuel bill.

These results, it is pointed out, were accomplished at very small expense with inferior equipment not designed in line with the latest knowledge and practice in the art. At a certain new plant, advantage has been taken of newer practice and experience.

This plant represents some of the most modern ideas in refinery construction as they relate to still settings and the treating of light oils as well as in tower equipment.

The accompanying drawings show in detail the towers in use at this refinery. Each still is equipped with two towers. The first tower is 30 feet high by six feet in diameter, insulated to a thickness of two and a half inches. The second tower is similarly insulated but is smaller, being only 25 feet high by six feet in diameter. Figure 1 shows the first or larger tower in detail. Figure 2 shows the smaller tower.

Baffle Arrangement

There are minor differences only in the construction of the two. The larger is fitted with eight baffles, the lowest one being about four and a half feet above the bottom and the highest one five feet below the top. These are plain baffles and they are set staggered, three feet apart. Each baffle has a diameter one inch smaller than the inside diameter of the tower and in addition, a segment is cut out of one side.

The alternate placing of these baffles with the segmental openings coming on opposite sides of the tower, give a zigzag upward course to the vapors and assure them the maximum length of travel, and the maximum of contact with the descending liquid.

The baffles form the only obstructions in the tower, there is no broken

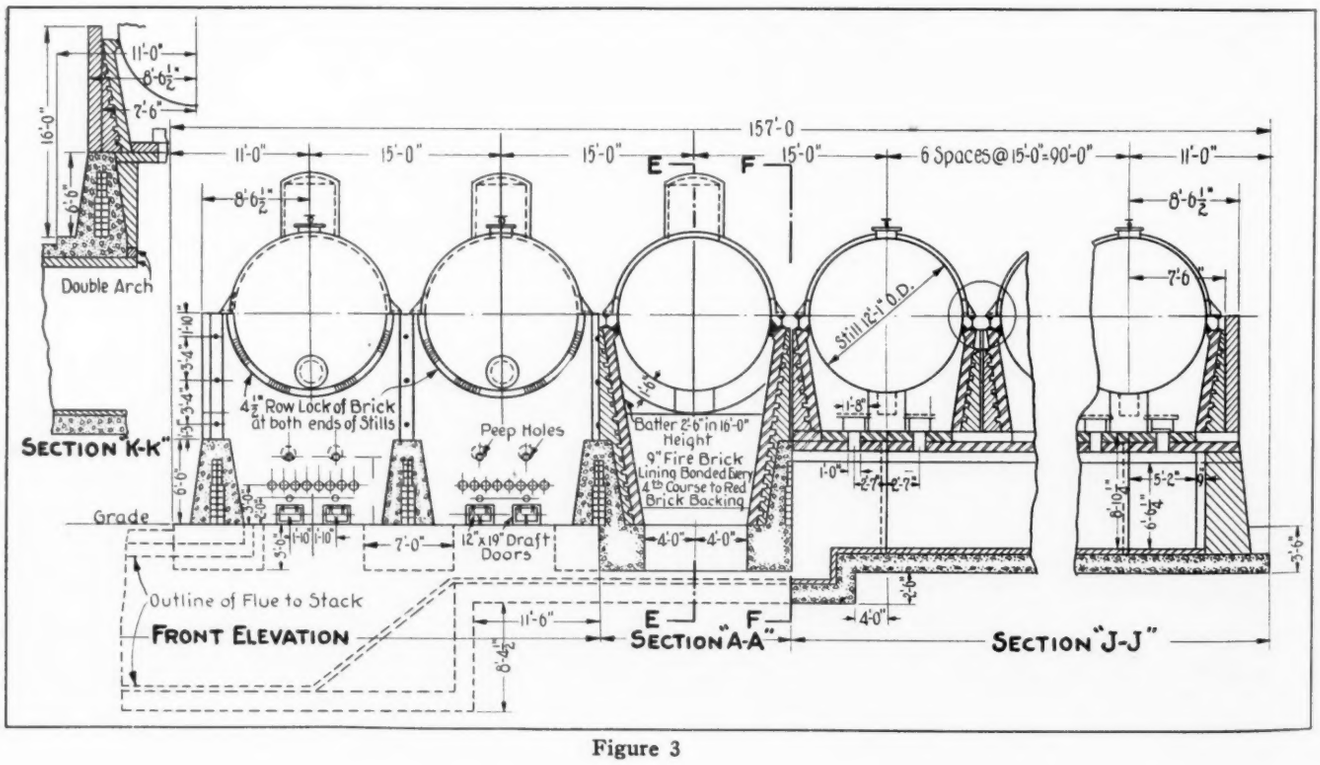
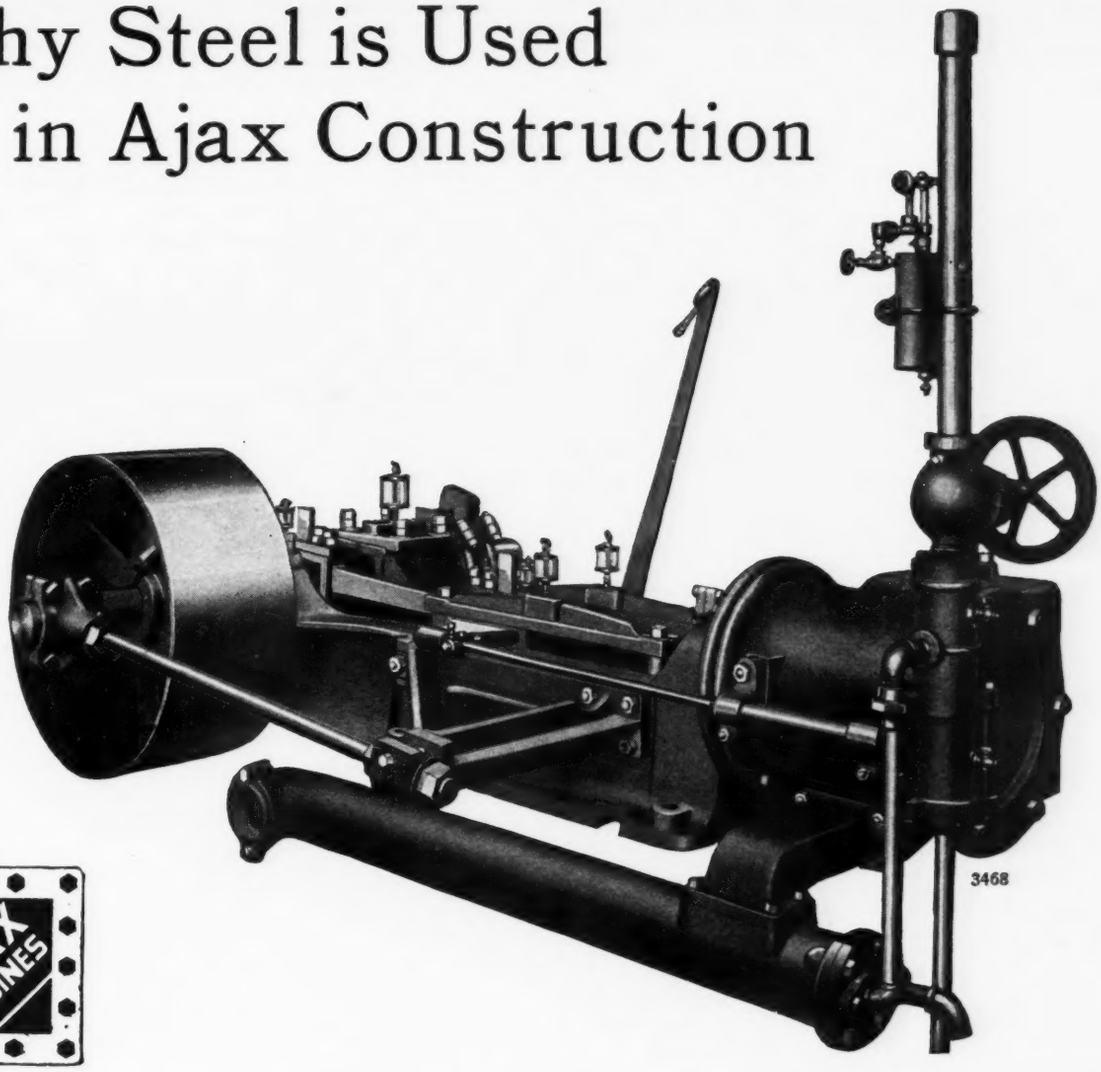


Figure 3

Why Steel is Used in Ajax Construction



AJAX ENGINES

AS the oil industry increased in size it was only natural that the operators in the field demanded an engine which could stand the strain of rougher handling.

A reason for the continued leadership of Ajax Engines is the fact that it has always anticipated the demand for better engines. Its most recent improvements, the use of 16 to 20% steel in foundry mixtures, the new outboard bearing, larger main bearings, improved stuffing-box design and lubrication, all do their part in making Ajax Drilling Engines the strongest engines on the market.

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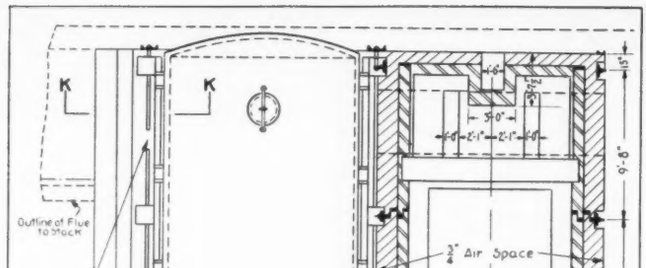

K
K
Outline of Flue to Stack
Inside & Outside Walls Tied Brick Up at These Points on End Walls Only
3/4" Air Space
Buck Stays and Tie Rods
12"x20.7" Channel
7/8" Tie Rods
2" Expansion Joints Indented Asbestos Roll Fire Felt
PLAN
SECTION "B-B"

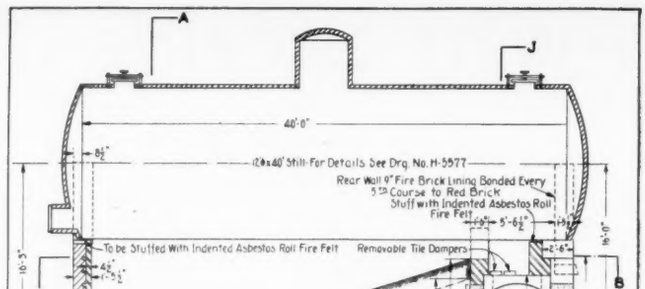

A
J
40'-0"
12'6"x40' Still-For Details See Drg. No. H-5577
Rear Wall 9" Fire Brick Lining Bonded Every 5th Course to Red Brick
Stuff with Indented Asbestos Roll Fire Felt
To be Stuffed With Indented Asbestos Roll Fire Felt
Removable Tile Dampers
No Fire Brick Lining in Center End Walls Below This Line-Walls of Red Brick Only
Grade
B
H
SECTION E-E

Figure 4

fire brick, tile section nor anything of that sort.

The pipe, for spraying in the liquid, one and a half inch, enters the tower about four and a half feet below the top, just above the topmost baffle. The pipe terminates in a T connection into which is screwed at right angles a section of one-inch pipe with a cap on each end. The bottom side of this arm is pierced on each side of the T with two slots a quarter inch wide and 6 inches long. Thus a spray is made through which the liquid is spattered down into the first baffle, dripping down around the edges in a spraying shower rather than in a solid stream.

12-Inch Vapor Line

The vapor line leads from the still into the bottom of the first tower through a 12-inch connection. The vapor coming into the tower meets the descending shower of liquid. The downcoming liquid exerts both a cooling and a scrubbing action on the ascending vapors. The heavier ends of the vapors being of a temperature far higher than the lighter vapors because of their higher vaporization point, are quickly cooled to the condensation point, some of their heat being absorbed by the liquid.

The baffles, by offering ample surface, furnish further aid in condensing the heavy ends.

At the same time, the temperature of the light ends of the vapors being close to the vaporization temperature of the lighter ends of the incoming liquid, vaporize some of these lighter ends and carry them overhead, thereby effecting partial distillation of the liquid in the tower and taking that much load off the still and off the fuel bill.

One important feature of this tower is that the temperature may be controlled within very narrow limits by varying the rate at which the cold distillate is pumped in. This is a great saving over the regulation of the temperature of uninsulated towers by means of doors, shutters and similar devices, to admit more air to the surface of the tower, which means greater waste of heat.

The rate of pumping in the re-run distillate can be varied according to various conditions, characteristics of the crude, initial and end point desired and the quality of distillate that is being re-run.

Operation with these towers is carried on in the same manner with either pressure distillate or crude as previously described. With crude, finished gasoline is taken off the first three stills, recirculating stock from the fourth still, finished kerosene off the fifth still and straw distillate off the sixth still.

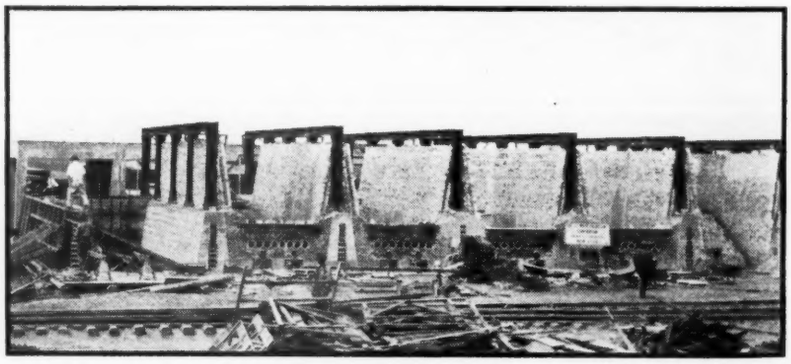
In such an installation, the second tower can either be used also for re-running or when the first tower obtains satisfactory results, the second tower can be cut out of the system. The second tower can also be advantageously used for fractionating. This would be when, for example, it is desired to split Navy gasoline into a high gravity product and a heavy naptha. That is, two streams could be taken off the second tower as finished products, the gasoline vapor coming over from the first tower being separated into the two fractions.

Many of the best men in the engineering end of the oil industry and allied industries are devoting their best efforts to the development of heat exchange equipment and especially tower equipment.

The Cross brothers have developed a tower that is used in connection with the latest installations of their cracking plants and which they say has proven successful also in use in skimming plants.

In the Cross towers the crude does not come in direct contact with the hot vapors.

Great progress has also been made in the development of bubble towers by The Texas Co., the Cross brothers and others. However, the results of these developments are not available right now for the publication. The bubble tower has furnished one of the most difficult problems in the whole tower field because of the fact that the forcing of the vapors through successive pans of liquid, unless the dimensions of the tower and the resistance factors are calculated to a nicety, will build up back pressure on the still that is likely



Showing construction of still setting walls, with steel I-beams that carry the weight of the stills.

to cause trouble, unless the still is built to stand the pressure.

In regard to improvements in still settings, Figure 3 shows the front elevation of the settings. Instead of resting on the brickwork of the setting, the lugs of the stills are hung on heavy structural steel I-beams which rest firmly on heavy concrete footers. The footers are of hollow arch construction, the center being built up with hollow tile as shown in Figure 3, which allows an air space. This air space, while it causes perhaps a slight escape of heat from the stills and consequent waste of fuel, nevertheless is believed to more than offset this by relieving the high temperature to which the concrete is exposed and consequently lengthening its life.

The bases of the concrete footers are carried down three feet six inches below grade and from the grade line are carried up in tapering form to a height of six feet six inches. At the grade line the footers are about four feet four inches thick, tapering to a thickness of about two feet two inches at the top.

The brickwork of the setting starts at the grade line, follows the taper of the footer and continues on to the top of the steel still supports. The inner courses are of common red brick with a nine-inch lining of fire brick on either side. The fire brick is bonded to the red brick every fourth course. One feature of the setting construction is the use of three-quarter inch expansion joints packed with asbestos roll felt in the brickwork at intervals of about nine feet. These expansion joints are staggered so that nowhere do they form a coinciding joint going through the entire wall.

Figure 4 shows the arrangement of the expansion joints. These joints allow for expansion and contraction of the still setting from the heat without heaving the masonry out of line.

Western Natural Gas Earnings

OTTAWA, CANADA, April 25.—January earnings of Canadian Western Natural Gas, Light, Heat & Power Co., Ltd., were $148,965 compared with $107,765 January, 1923, an increase of $41,200. Earnings from October 1 to January 31 amounted to $409,673, an increase of $20,570 over the corresponding period of last year.

Distributors for Havoline

OTTAWA, CANADA, April 25.—Messrs. Storey & Campbell, of Vancouver, have been appointed sole distributors for British Columbia by the Indian Refining Co. of Illinois. J. B. Maus, the Canadian manager, is spending some time in Vancouver in connection with selling plans.

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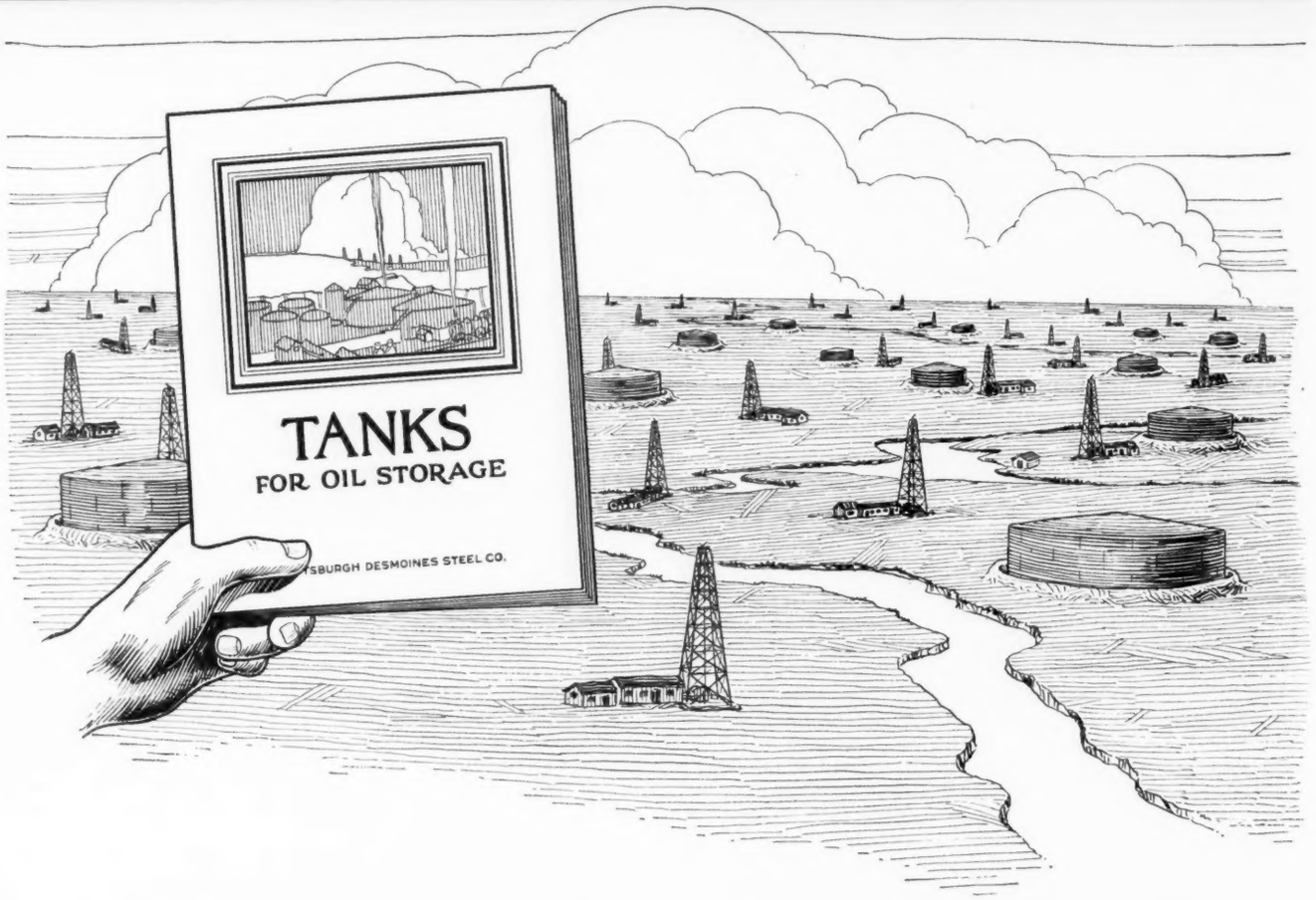

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Gassing Slightly

By Rollin Stone

Distinguished Sage Is Now In The Chair

FOR the nonce, which is just half as long as a once, we have decided to turn over this page of intellectual castoria to Mr. W. G. Long, of Tulsa. Reader, you should meet Mr. Long. Reader—Mr. Long. That's effected.

Mr. Long, who is generally referred to as "Bill," a way they have out west of designating a man whose name is William, has been quite exercised over all these miracles which provide a non-stop ticket from senility to adolescence. In all the 118 years I have known him, he has never before been so troubled in his mind about anything. He is usually carefree, like a tooldresser on a fishing job, and can be depended upon to galvanize the folks immediately around him into appropriate activity. Once, for instance, he led an undertaker's convention in singing jazz songs—that was in Casper.

But the skip-birthday system has his goat staked out with a short rope. In fact, he's opposed to it and in the following verses he will set it forth.

—Rollin Stone

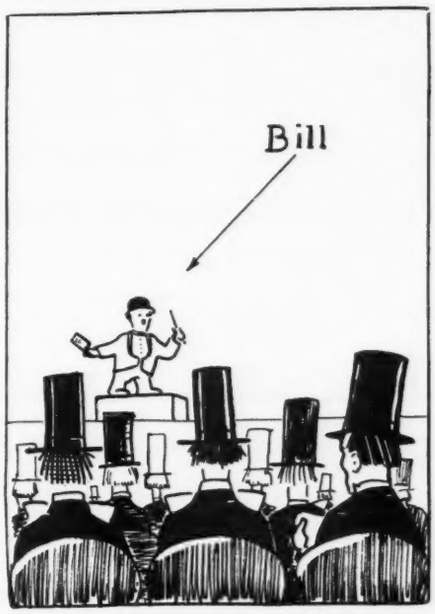
The Reveries of a Grandfather

By Bill Long

There was a time when scholars and philosophers were unanimous in the opinion that a grandfather never realized a dream. It was generally recognized that the book that was to take its place in the world's literature, or the speech that was to sway the Senate or the House of Congress by its masterly logic and rhetoric, was always stopped by the little chubby pink fingers sticking out from under the eiderdown robe in the casserole or the bassinet. Previous to this advent your hopes ran high and your teeth clicked with the vigor of youth. But when you are a grandfather, the wife will not even look to see who your partner is at bridge or the dance. This, as Shakespeare, says, is the deepest cut of all.

Your mirror does not say Grandfather; your step may be elastic; but the cut in the social life reveals that drear days are at hand. We of the present day do not have to resort to hair dye, and here is where we have the laugh on generations past.

In West Virginia, where I spent many happy years, there was a root indigenous to that country called "Jump Root." The extract from this root blended scientifically with the extract of corn would rejuvenate and reinvigorate. It would make the old young; it would grow teeth in the toothless jaw, and hair on the shining pate of age; old men who thought the stripes on a barber pole was an advertisement for stick candy became frequent visitors to the tonsorial artist of Coon Holler. Men who had been fed on hash and mash grew new teeth and were able to masticate the callous where the yoke worked on the ox. Eyes would brighten, lips become red, and the



Official Convention Photo. Associated Undertakers of America; Casper, 1824.—(Arrow points to Bill Long leading singing.)

cheeks pink without a drug store, and the habitue of these brew grounds would jump fences like a fawn.

Naturally this Jump Root was sought. You would see old, decrepit men dragging their crutches and canes, searching the mountain-side for this root of eternal youth. They trained their coon dogs to dig it up, but they soon exhausted the supply and had to turn to science.

No Spare Parts

Science, monkey glands, adenoids, and thyroids! Dear reader, did you ever think about the cost of parts in an automobile? Your lizzie will cost $395.00. Run it for three years and the parts to keep it up will cost $5,299.32, war tax added. Think of having to buy parts for your physical make-up! Consider the war tax. Think what Henry Ford or John D. would do, if they quit manufacturing cars and refining oil and go in for manufacturing glands for the human anatomy.

If science is right, we are putting our order in for rompers, and a chair at the radio for bed-time stories. I cannot understand that man who thinks he is so everlastingly good as to deserve an encore. Any man who has reached the age of fifty-five without being chloroformed or arrested for wife-beating ought to feel that he has been compensated and will be willing to quit. Another view of science, and if the monkey gland is right, what would we do with "Bill" Bryan, for instance, for the next hundred years. It would be undignified to see a man like Billy looking for bargains in spare parts.

God knows our daughters are enough worry now without our having to fret and stew about the boy holding her hands in the parlor, wondering whether he is nineteen or ninety. Personally, I do not want to have to study Zoology or Botany or wander through the zoo to look over the father of my prospective son-in-law. Think of the wife when she returns from the club to find her husband crying because the cat has eaten his Cream-of-Wheat; or to find him doing a cake-walk on the clothesline.

"As you think, so iz ye"

There is just a short step between "Jump Root" and monkey glands. It is principally in the head. You can never make a man out of a monkey; but woman, God bless her, can make a monkey out of a man, and has been capable of doing this since Eve slipped on the rotten apple in Eden and handed poor, simple-minded Adam the core. Science has solved the problem of eternal youth. Fix this in your mind, forget "Jump Root" and monkey glands and live the hopeful mellow life and quote Coue:

Every day in every way
  Like an onion I grow stronger;
Every day in every way,
  Without new glands I'm younger.
Every day in every way
  The monkey's place is true;
Every day in every way
  We know it's in a zoo.

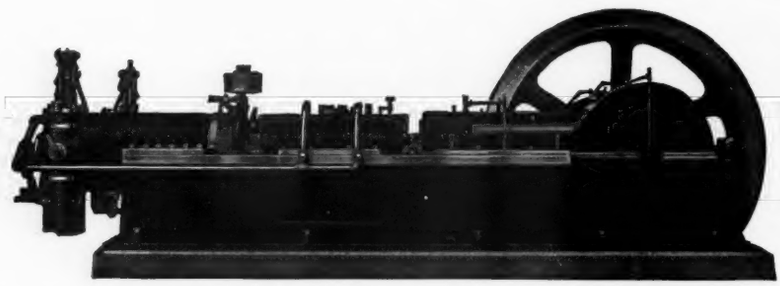
TULSA, April 25.—H. N. Spofford, formerly geologist for the Gladys Belle Oil Co., is now in charge of geology in Arkansas for the Marland Oil Co., of Texas, and is making his headquarters in Texarkana.

HOUSTON, April 24.—F. B. Plummer, geologist of the Rycade Oil Corp., here, is on leave of absence, and will devote the next three months to giving a series of lectures on petroleum geology at the University of Chicago.

CHICAGO, April 24.—W. F. Graver, of the Graver Corp., East Chicago, Ind., has reported safe arrival in Los Angeles where he started on a vacation about a week ago. He will be away from Chicago about a month all together it is believed.

New Enclosed Type WATTS-MILLER Gas Engines With Direct-Driven Compressors and Vacuum Pumps

New Enclosed Type Direct Gas Engine Driven Compressor



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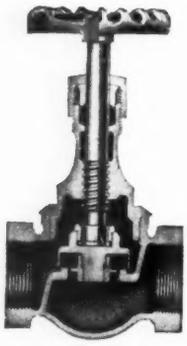

Sectional view Fig. 106 Jenkins Standard Bronze Globe Valve

Each part of a Jenkins Valve has been thoroughly standardized and is manufactured on an interchangeable basis. That is, the spindle of one valve will fit perfectly into any other Jenkins Valve of the same type and size, so will the disc holder, and every other part of the valve.

The true significance of this interchangeability feature is self-evident. If any part must now and then be replaced, this can readily be done from the stock of the nearest Jenkins dealer—or from any Jenkins branch office. In this way annoying delays are avoided and time and money saved.

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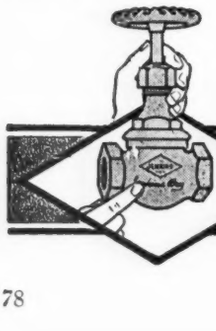

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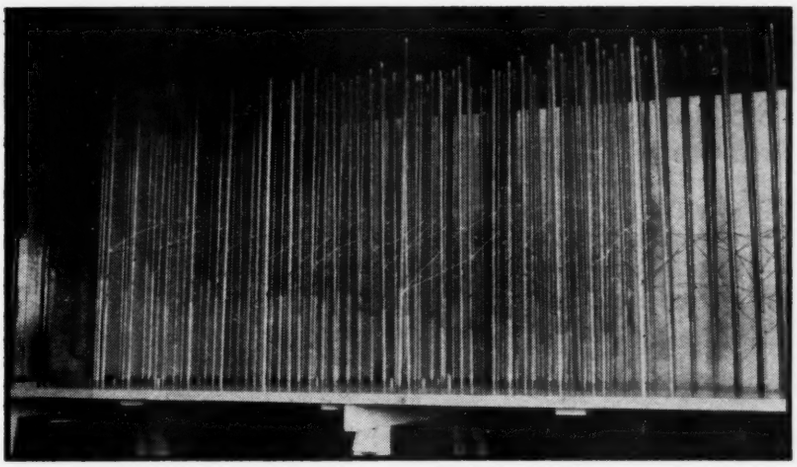

Side view of peg model of Graham field, Carter county, Okla., showing east flank of structure and regularity of contour along crest.

Peg Model Of Graham Field

Staff Special

ARDMORE, April 25. — The peg model of the Graham field, Carter county, made by John C. Bunn, assistant petroleum engineer with the local station of the Bureau of Mines, was completed today and placed on exhibition in the lobby of the Ardmore hotel. It has been attracting a great deal of attention among oil men.

The model shows in graphic form the remarkably steep structure on which the field is located, this feature being brought out clearly by the use of different colored strings connecting certain sands in each well with the corresponding point in other wells. The upper string, marking the Kirk gas sand, is white, the middle, representing the Johnson sand, is red, and the lowest one, indicating the Graham sand, is yellow. Sea level is shown by a white mark on each log and each log is leveled up on this mark, so that sand depths show in their proper proportional place.

The Skelly well which extended the field a mile to the north west is represented on the model by a peg, although it was necessary to build an extension to the table in order to get this well in. Connecting up the sand in this well with other wells in the field indicates that it is located very nearly on the crest of the structure, and makes it appear certain that all intervening territory will be productive. In the accompanying picture, showing the peg model from what would be the northwest the camera is placed very nearly over the location of the Skelly well.

The model is made on a scale of 100 feet to an inch vertical, and 200 feet to an inch horizontal, so the dip of the structure is exaggerated to twice its actual steepness.

New Books

A book that should prove exceedingly valuable to the mechanical engineer in charge of plant operation has just been put out under the title, "Power Plant Lubrication," by the Tide Water Oil Co., for free distribution among plant engineers.

The theories of friction and of lubrication are stated briefly and in conversational language in the first chapter. Then the three classes of lubricants, fluid, plastic and solid are discussed, with short discussions of the uses and adaptability of members of the three classes for various purposes.

Testing of lubricants is treated in another section. Simple methods for making various tests are given in simple language. Tests covered are: gravity, flash, fire, viscosity, cloud, cold, emulsion, color, sediment, precipitation or tar, moisture, fatty acid and saponification. The purposes of the test and what their results indicate are given.

Particular attention is given to bearing lubrication. The various types are briefly described, journal, slipper, step, and thrust and ball and roller bearings. Bearing metals, oiling devices, lubricating systems of various kinds, for bearings, including grease and oil, are discussed.

One chapter is devoted to steam engine lubrication under the following headings: Lubrication and lubricating oils, steam cylinder lubrication, direct system, atomization system, lubricators, hydrostatic lubricator, forced feed lubricator, effects of viscosity, point of atomization, atomization nipple, functions of cylinder oils and steam engine bearing lubrication.

Turbine lubrication is treated under the following headings: Horizontal turbine, vertical turbine, turbine lubricating systems; batch filtration, continuous filtration, continuous by-pass filtration, the lubricating problem, reduction gears.

Diesel and semi-Deisel engines come in for attention under the headings: four-stroke cycle principle, two-stroke cycle principle, fuel valve, lubrication of Diesel and semi-Diesel engines, fuels, Diesel engine air compressors, deposits in cylinders.

Lubricating appliances for generators and motors are discussed in another chapter, and auxiliary machinery, such as air compressors, pumps, mechanical stokers, transformers, oil switches, machine tools, filtration of oil and oil storage systems, are treated in another chapter. The book throughout is plentifully and clearly illustrated with colored drawings that show the course of the lubricating oil through the various parts of the machinery discussed, methods of filtering it in continuous and batch systems and methods of applying it to the points requiring lubrication.

Discussion of the operation of the various pieces of machinery themselves has been held down to a minimum and the treatise devoted entirely to the discussion of lubrication problems.

The last two chapters of the book are devoted to the Tide Water line power plant lubricants, their method of manufacture and so forth, and a short history of the company, its growth and scope.

Marland Personnel Strong

DENVER, April 24. — The entrance of the Marland Oil Co. into this district is attracting considerable attention. The company will operate through a subsidiary, the Marland Oil Co. of Colorado, a Delaware corporation. Its territory will embrace New Mexico, Colorado, Wyoming and Montana. Travis L. Golay is in active charge of the new company and Alex W. McCoy is vice president; C. S. De Monbran, secretary and treasurer. Glen M. Ruby, formerly with the Empire Gas & Fuel Co., but recently a free lance and one of the best known geologists in this area, will be chief geologist. He is thoroughly familiar with the Rocky Mountain fields through several years of direct contact. I. D. (Ike) Stewart, will be chief scout and S. C. Yingling will be superintendent of the land department. It is a strong combination and with ample finances which have recently been made available will, undoubtedly, become a big factor in this district. It will maintain a large geological staff and is expected to become an aggresive wildcatter. President E. W. Marland, and other officials of the parent company, were in Denver the past week conferring with the local representatives.

ST. LOUIS, April 24.—F. E. McMahon, formerly sales manager of the Sapulpa Refining Co., effective April 1, became sales manager of the Caddo Central Oil & Refining Corp., which operates two refineries at Shreveport. He stopped off at the convention of the National Petroleum Marketers Association on his way south from Chicago to take up his new duties.

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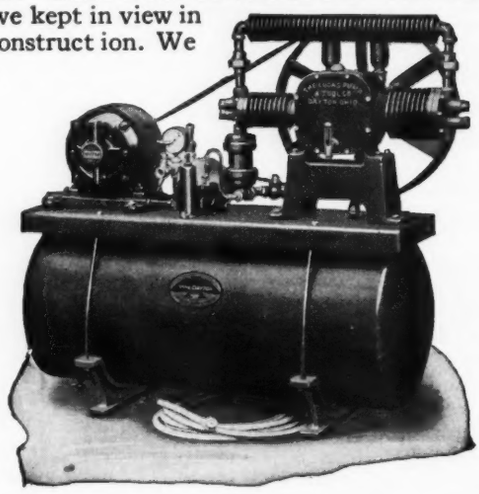

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Ohio To Drill More In Rex Lake Field

DENVER, April 25.—Ohio Oil Co. is going to start two additional wells on the Rex Lake dome, Carbon county, Wyo., 22 miles west of Laramie, where it has one well on 23-16-77 drilling at 1600 ft. These will be on 25-16-7, Union Pacific land. The discovery well on this dome came in last fall and flowed 50 to 60 barrels of light oil from three sands cut at 3733, 3845 and 3868 feet. It is estimated good for 300 barrels on the pump but the field has not yet been connected with a pipe line. The Ohio controls most of the acreage on the structure.

Southwestern Petroleum and Cliff Petroleum companies have been delayed in completing their wildcat on 25-21-79, Medicine Bow structure, Carbon county, as a result of an accident to the 6¼-inch casing. Bottom is at 4730 feet and is believed to be only a few feet off the Muddy, the first sand in the Dakota. This is the discovery well which cut the Wall Creek at 4032 feet last fall and which sand produced an average of 300 barrels a day.

Pipe Line to Panhandle

PANHANDLE, TEX., April 25.—Right of way has been obtained and material being assembled for pipe line from North Carson County field to Panhandle to handle productin of that field. The Plains Pipe Line Co. which is building the line, is headed by W. M. Priddy of Wichita Falls, president of the American Refining Co. there. The line will be approximately 15 miles in length and will be large enough to handle the entire present production of field which is about 2000 barrels per day.

Not Hiding Oil

OTTAWA, CANADA, April 25.—"The suggestion made in some quarters that we are concealing actual results of our drilling in certain areas is plain fiction," said C. O. Stillman, president of Imperial Oil Ltd., on a recent visit to Calgary. "The Dominion government," he stated, "is in possession of the details of the log of every well we have drilled, and more than this, we would not now be hauling crude hundreds of miles from the United States if we had a local supply here. We hope to have that some day, but we have not found it yet."

Cuban Production Small

WASHINGTON, April 25.—At present the only active oil wells in Cuba are those at Bacurano, province of Habana, where a company drilled its first well in 1917, says the Department of Commerce. It is stated that it has produced approximately 300,000 barrels of crude oil to date. At this time the combined output of the wells amounts to about 20 barrels daily. The production is sold to a local refining company. The oil is of paraffin base but contains a small amount of asphalt.

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Oil Trademarks For Copyright

THE following are trade-mark applications pertinent to the oil industry pending in the United States Patent Office which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade-Mark Company, Barrister Building, Washington, D. C., trade-mark specialists.

As an additional service feature to its readers, this paper gladly offers to them an advance search, free of charge, of any mark they may contemplate adopting or registering. You may communicate with the Editor of NATIONAL PETROLEUM NEWS or send your inquiry direct to the National Trade Mark Company, stating that you are a reader of this journal.

ROTARY

Ser. No. 186,725. (Class 15, Oils and Greases.) Southern Oil Company of New York, Inc., Horseheads, N. Y. Filed Oct. 8, 1923. Particular description of goods.—Gasoline and Lubricating Oils and Greases. Claims use since Aug. 11, 1923.

FORZOL

Ser. No. 192,160. (Class 15. Oils and Greases.) Tide Water Oil Company, Bayonne, N. J., and New York, N. Y. Filed Feb. 11, 1924. Particular description of goods.—Lubricating Oils. Claims use since Feb. 7, 1924.

GOVOLINE

Ser. No. 184,859. (Class 15. Oils and Greases.) The Interocean Oil Company, Pierre, S. D., and New York, N. Y. Filed Aug. 22, 1923. "Govoline." Particular description of goods.—Gasoline. Claims use since June 1, 1914.

EMELINE

Ser. No. 189,510. (Class 15. Oils and Greases.) Edward S. McMakin, Kalamazoo, Mich. Filed Dec. 11, 1923. Particular description of goods.—Lubricating Oil. Claims use since March, 1921.

LORECO

Ser. No. 190,844. (Class 15. Oils and Greases.) Louisiana Oil Refining Corporation Richmond, Va., and Shreveport, La. Filed Jan. 15, 1924. Particular description of goods.—Gasoline, Kerosene Naptha, Fuel Oils, Lubricating Oils, Greases, and Motor Oils. Claims use since May 23, 1918.

VEEDOL·FORZOL

Ser. No. 192,159. (Class 15. Oils and Greases.) Tide Water Oil Company, Bayonne N. J., and New York, N. Y. Filed Feb. 11, 1924. Particular description of goods.—Lubricating Oils. Claims use since Feb. 7, 1924.

LORECO

Ser. No. 190,845. (Class 15. Oils and Greases. Louisiana Oil Refining Corporation, Richmond, Va. and Shreveport, La. Filed Jan. 15, 1924. Particular description of goods.—Gasoline, Kerosene, Naptha, Fuel Oils, Lubricating Oils, Greases, and Motor Oils. Claims use since May 23, 1918.

UNARED

Ser. No. 188,580. (Class 15. Oils and Greases.) Union Oil Company of California, Los Angeles, Calif. Filed Nov. 19, 1923. Particular description of goods. —Lubricating Oils and Fuel Oils. Claims use since Oct. 3, 1923.

UNAX

Ser. No. 188,579. (Class 15. Oils and Greases.) Union Oil Company of California, Los Angeles, Calif. Filed Nov. 19, 1923. Particular description of goods. —Lubricating Oils and Fuel Oils. Claims use since Oct. 3, 1923.

FURNOL

Ser. No. 188,941. (Class 15. Oils and Greases.) Tide Water Oil Company, Bayonne N. J., and New York, N. Y. Filed Nov. 26, 1923. Particular description of goods.—Fuel Oils. Claims use since May 24, 1923.

DALCOYL LUBRICATION

Ser. No. 187,728. (Class 15. Oils and Greases.) Dalco Lubricants, Incorporated, Washington, D. C. Filed Oct. 31 1923. The right to the exclusive use of the word "Lubrication" is disclaimed apart from the remainder of the mark shown in the drawing. Particular description of goods.—Lubricants, and More Particularly for a Grease-Like Lubricant. Claims use since Oct. 15, 1923.

TORPEDO

Ser. No. 189,780. (Class 15. Oils and Greases.) Hercules Gasoline Co., Los Angeles, Calif. Filed Dec. 17, 1923. Particular description of goods.—Gasoline, Motor Oil, Distillate, Kerosene, Fuel Oil and Stove Oil. Claims use since July 1, 1923.

Industrial Notes

C. J. Tagliabue Mfg. Co., Brooklyn, N. Y., has just published catalogue 904 on its line of control instruments, including temperature, pressure and humidity controllers.

* * *

Farrell Manufacturing Co., Joliet, Ill., has just issued a catalog describing its line of truck tanks for distribution of petroleum products, and also underground storage tanks. It shows tanks of varying capacities mounted on 2½ and 5-ton chassis.

* * *

Wilson-Snyder Manufacturing Co., Pittsburgh, manufacturers of pumping machinery, has put out Bulletin W-140 describing its new direct acting duplex steam pump for handling hot oil, up to 800 deg. F. against high pressure. The effectiveness of these pumps for circulating oil through cracking systems is emphasized in the bulletin, which is available upon request.

* * *

The Power Specialty Co., 111 Broadway, New York, has put out a booklet describing Foster heaters or pipe stills for refineries. The booklet contains a description of the Foster still, with several illustrations showing construction details, describes the process of combustion and discusses the principles of heat transfer. Tube cleaning, tube removal, instruments, and starting and stopping runs in connection with the equipment are treated. Tables and charts giving data on flue gas temperatures, flow of oil through pipes and similar information are also contained in the booklet.

* * *

L. J. Wing Mfg. Co., 352 West 13th St., New York, manufacturers of air handling and power plant machinery, has just issued a new bulletin on its type E M motor-driven blowers for forced draft, which are especially adapted to heating boilers. The booklet contains illustrations of various types of installations with dimensions, capacities and horse powers required.

* * *

Metals Coating Co. of America, Philadelphia, has just published a pamphlet describing the improvements in construction and operation of its MetaLayer, Schoop Process, which is a process and apparatus for applying coatings of any commercial metals to any surface. The process provides protection against chemical action, atmospheric corrosion or mechanical erosion. The pamphlet will be mailed to any interested parties.

Here And There

PETERSBURG, VA., April 26.—Efforts of oil companies to beautify the localities in which they operate, improving and adding to the appearance of the town in general, are again being demonstrated. The Delta Oil Co., which has been in the retail and wholesale oil business here for the past five years, handling Marathon products, has cleaned up a spot that has been an eye-sore in the town for a long time. The spot happens to be located at the rear of one of the company's service stations, where rubbish of all sorts has accumulated. T. M. Brockwell, manager of this particular station, has had the rubbish removed, the ground leveled and the corner fenced off. It will serve as parking space for automobiles and can accommodate about 50 cars. The company has not decided as yet whether a fee for parking will be charged.

S. D. DeShazor is president and general manager of the company.

* * *

THIEF RIVER FALLS, MINN., April 25.—Elmer Helgeson was recently placed in charge of the White Eagle Oil & Refining Co.'s service station here. Ed Ness, formerly in charge of the station, was transferred to another station to take joint charge with Carl Angell. Mr. Helgeson previously was tank truck driver for the Standard Oil Co. of Indiana.

* * *

WICHITA, KAN., April 24.—Ed F. Ryan, of the Red Star Lubricating Co., distributor of Texaco products, has bought the filling station which occupies a corner of the Lassen Motor Co. building. On the opening day, Mr. Ryan gave to each purchaser of five gallons of gasoline, a choice between a box of chocolates and a Kewpie doll.

* * *

JONESBORO, ARK., April 26.—The Arkansas Co. has just been organized here for jobbing and retailing of petroleum products, according to J. K. Cartwright, manager. Associated with Mr. Cartwright are: Dr. H. H. McAdams and Dr. H. A. Stroud.

* * *

OIL CITY, Pa., April 28.—James D. Berry of James B. Berry's Sons Co. and Mrs. Berry are motoring north from Florida whither they went last winter following the severe illness of Mr. Berry.

* * *

MARSHALL, MINN., April 24.—The Marshall Co-Operative Oil Co., just organized here, was expected to start operations today. The company has 400 stockholders.

* * *

CLEVELAND, April 28.—Louis Carruth, president, Canfield Oil Co., has returned from a sojourn in Arizona.

WICHITA, KAN., April 22.—G. P. Nissen, formerly traffic manager of the Sterling Oil & Refining Co. of this city, on April 15 succeeded C. W. Rice as traffic manager of the Vickers Petroleum Co. of this city. Mr. Rice will devote all his time to the sales end, he having up to this time been both traffic and sales manger. Demands of increased business necessitated the change in the company.

* * *

CATSKILL, N. Y., April 28.—The Catskill Mining Oil and Refining Co., Inc., of Manhattan, has been incorporated with $100,000 capital for the prospecting and developing of oils and minerals in the Catskill mountains, by H. W. Wiley, S. Wiley and C. A. Steurer. The company has secured 10 leases on properties in Ulster county.

* * *

CLEVELAND, O., April 28.—Ed S. Hannum, formerly employed in the Lorain, O., district of the Cities Service Oil Co., has been made district manager at Sandusky, O. Roy G. Smith, who preceded Mr. Hannum as district manager at Sandusky, has been transferred to other work out of the Cleveland office.

* * *

KANSAS CITY, April 26.—C. C. Divinney has just been made manager of the new northwestern division of the White Eagle Oil & Refining Co. He will have charge of distribution of White Eagle products in the area surrounding St. Paul, Minn., where he has opened offices.

* * *

CHICO, CAL., April 28.—The Standard Oil Co. of California has started a paint campaign. It is painting all gasoline pumps at its 700 service stations on the Pacific coast, red, white and blue to harmonize with its color scheme at its stations, according to Tom Irving, Jr., assistant special agent here.

* * *

CHICAGO, April 24.—Headquarters office of the Moore Refining Co. has recently been moved from Chicago to the plant in Arkansas City, Kan. President George N. Moore will still maintain his personal headquarters here, it is reported.

* * *

KANSAS CITY, April 25.—B. F. Davenport, formerly agent for the Pierce Oil Corp., has been made manager of the Justrite Oil Co. which is building new stations at Poplar Bluff and Sikestown, Mo.

* * *

OIL CITY, PA., April 28.—Frank Berry, a Pennsylvania producer and affiliated with James B. Berry's Sons Co. is celebrating the birth of a son three weeks ago.

Big Tourist Movement Expected This Year

DENVER, April 26.—A few days of bright sunshine and warmer weather in the larger cities resulted in increased sales of refined products by the marketing companies but the season when autoists take to the mountains and make long trips is still some weeks ahead. The outlook for tourist travel from the east this year is very bright and this is an important item for the marketing companies since thousands of people come to the Rocky Mountain district to spend their vacations.

Some idea of the importance of this business may be gained from the fact that 247 camps for automobile tourists were operated by municipalities in Colorado alone last year and the number of campers was 643,015. The number of visitors to the Rocky Mountain national park was 218,000; to the Denver mountain parks, 800,000; to 15 national forests, 1,600,000 and to Mesa Verde national park, 5236. While many of these registrations are duplicated, they give some idea of the tourist and local travel by auto in the mountains in the summer but do not include the Yellowstone national park and other districts which form a prolific source of revenue from petroleum products.

WASHINGTON, April 24.—Locomotives in January, 1924 consumed 188,842,000 gallons of fuel oil as compared with 150,207,000 gallons in January, 1923, according to reports to the Interstate Commerce Commission.

During the fourth quarter of 1923, 2,230,801 tons of crude oil were moved by rail, as compared with 1,558,613 during the same period in 1922. Railroad movement of asphaltum in the fourth quarter of 1923 was 562,240 tons, as compared with 491,386 tons in the same period in 1922. Rail shipments of refined petroleum and its products in the last three months of 1923 amounted to 9,551,401 as compared with 8,372,372 tons in a corresponding period in 1922. Grand total of carload traffic in the fourth quarter of 1923 was 308,291,505 and in the same period in 1922, 301,713,432 tons.

Oppose Moving Service Station

WATERTOWN, S. D., April 24.—City council is attempting to prevent the Standard Oil Co. of Indiana from moving its service station from First Ave. to Fifth Ave. and Maple St. The board of aldermen has already issued a mandate against the use of the streets for the transfer of the station, believing that it constitutes a fire hazard. Residents of Maple St. have asked the city to restrain the Standard from moving its station.

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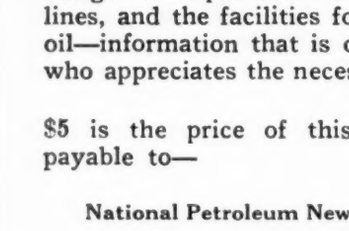

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Money Wagons Assemble Cash From Stations

Staff Special

CHICAGO, April 24.—To side-step the activities of gunmen and highwaymen, several of the larger oil distributors of the country have given up entirely the work of collecting their own money from service stations. Officials consider it is too much cash to transport over all parts of a big city in a company car, no matter how well guarded it might be.

In a number of the larger cities institutions have been built up to perform the work of carrying money and valuables about the streets, and the services of these companies have been enlisted by oil companies.

In Chicago and also in Detroit the daily collection of cash from service stations for several of the larger distributors is made by Brink's Express Co. At one time it was an ordinary cartage company. Finally, having built a reputation for integrity and success in carrying valuables from place to place, it became profitable to convert to a money handling concern. Now Brinks Express Co. is in every sense a bank in the transfer business. Its headquarters are much like any other bank but it operates a fleet of money wagons equipped with all modern safeguards against robbery.

The Sinclair Refining Co., for instance is a patron of this concern. The auditors of the company visit each service station every day, just as other oil companies' auditors do, but they do not take the money away with them. That is left for the express company to do. The auditor carries a bunch of canvas bags with the name of the company printed on them. The bags pucker at the top and are fastened closed with a light wire cable and a leaden seal, very much like a car seal. The auditor carries the sealing device.

Other equipment of the auditor includes bank deposit slips in four colors. They are made out in carbon copies, quadruplicate. The original is white, the duplicate is yellow, the triplicate is pink and the quadruplicate is blue. In the main, they are alike except in color Lines coincide so they can be made out correctly in carbon copy without chance of error. Sinclair's deposit slips are slightly more complicated than most deposit slips, showing the exact denomination of every bill and coin.

When the auditor from the company's office enters a service station he opens the safe, counts the money, makes out the deposit slips described above, puts the money into the bag and with it seals up all four copies of the deposit slip. The bag goes right back into the safe and is locked up again. This performance marks the official close of the business day at that station. Subsequent business is done at the cash drawer until Brinks express wagon comes along and picks up the cash in the bag.

Suppose this is done in Detroit. The money is carted to the bank with which

Sinclair Refining Co. does business. The bank again counts the money, checks the original and duplicate deposit slips, retains the original and sends the duplicate to the company's main office in Chicago. When the third and fourth copies are turned over to the right authorities at the district office they are checked against stock reports and station deliveries. The district office enters the figures on another form relating to material, and sends the larger form accompanied by the triplicate copy to the main office in Chicago. The fourth sheet of the deposit slip is held by the district office.

In this way, every office interested in the amount of money taken in from any individual station is supplied with the information from the pencil of the auditor himself and the slip countersigned by the bank teller. Ultimately the treasurer of the company gets copies from the district manager and the bank also, which may be compared.

Drive-In Stations Win First Round

WALLA WALLA, WASH., April 25.—The fight between drive-in station men and curb pump proprietors which started here a few weeks ago, has been carried to Judge Edward C. Mills of the superior court, who, on the morning of March 29, issued an alternative writ of mandamus in the case. The writ orders the city commissioners to either remove the curb gasoline pumps by April 15 or appear in court and show cause why they have not done so.

Both sides have been fighting hard and standing pat. Mayor Ben Hill, in an effort to give the contending parties as opportunity to adjust their differences, recently called a meeting at the Chamber of Commerce which resulted in failure. The drive-in men claim that the curb pump operators carry on their business on public highways on which they pay no taxes, obstruct traffic and sell gasoline below the market, while the curb men argue that they do pay taxes, since they usually carry on a tire accessory and garage business in connection with the gasoline pumps, and contend that the drive-in men want them out of business merely because they sell gasoline at a lower price, generally between 1 and 2 cents lower than the established market.

W. G. Coleman, attorney for the drive-in station men, won the first round in the proceedings which resulted in the writ handed down by Judge Mills.

A new organization was formed by the curb dealers, known as the Garage & Accessory Gas Stations. W. J. Steel, of the T. S. Steel Machine Co. was elected head of the association, to direct the fight against the "drive-ins."

If you are looking for a refinery superintendent, a district manager, a salesman or an oil company accountant, just glance over the "Position Wanted" ads on our classified page each week. Some of the most capable men in the industry have made use of this means of notifying the trade that their services were available.

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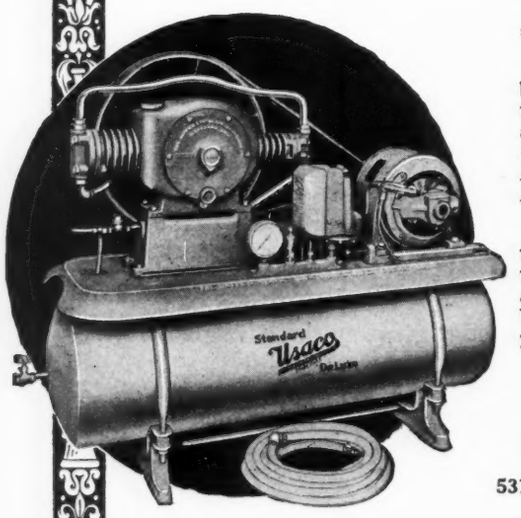

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Conservatism Will Pay Good Dividends In Oil Industry This Year

By H. S. Reavis

AN ANALYSIS of government statistics (U. S. Geological Survey and U. S. Bureau of Mines) covering operations of the United States oil industry in February, 1924—the latest month for which figures are available—reveals the following outstanding fact:

Inventories of all grades of petroleum —crude, unfinished oils, finished products, excepting wax and asphalt, which are minor items)—increased 11,922,235 barrels of 42 gallons each, or at the average rate of 411,111 barrels per day.

The quantity added to inventories was greater per day than in any month in 1923. The peak of inventory increase in 1923 was reached in June with an average of 404,900 barrels per day. February, 1904, exceeded this average by 6211 barrels per day.

Oil inventories have been accumulating steadily since Jan. 1, 1923, and on Feb. 29, 1924, were 487,184,756 barrels, an increase of 105,272,769 barrels in 12 months.

Of the Feb. 29 total, 334,585,000 barrels were credited to pipe lines and tank farms, and 12,599,756 barrels to refiners' storage. The increase in pipe line and tank farm stocks in 12 months was 74,559,000 barrels, and in refiners' inventories 30,713,769 barrels.

Pipe line and tank farm stocks of crude increased 843,000 barrels in February, while refiners' inventories increased 11,079,235 barrels, constituting nearly 93 per cent of the total increase.

In the following table the additions to refiners' stocks in February, 1924, January, 1924, and February, 1923, are set out for purposes of comparison:

Monthly Increases in Refinery Inventories

(Barrels of 42 Gallons)

	Feb. 1924	Jan. 1924	Feb. 1923
Crude and unfinished oils	5,064,353	a2,840,303	a1,170,163
Finished products	6,014,882	4,232,109	3,252,242
Net added to storage	11,079,235	1,441,806	2,082,079
Average per day..	382,043	46,510	74,217

a Decrease.

As a whole, domestic demand for oil products was not up to expectations in February. Daily domestic demand for gasoline declined 12½ per cent as compared with January, 1924, and the increase over February, 1923, was only 3.6 per cent.

Stocks of gasoline at the end of February were 1,274,221,898 gallons, exceeding the 1923 peak (April 30) by 37,804,027 gallons. March, 1924, statistics are not yet available but if we calculate the accumulations on the basis of the average established in the 60 days of January and February, stocks at the end of March are indicated as 1,528,871,722 gallons. Using the February average as a basis would make the March 31 stocks 1,557,736,006 gallons.

The accumulation of gasoline proceeded steadily in 1923 from the first of the year until April 30, when stocks reached the peak of the year, 1,336,417,871 gallons.

March, 1924, demand was distinctly disappointing, due to bad weather over the entire country. April promises to show greatly improved consumption, but if gasoline production is maintained at the average established during the first two months of the year it is likely that gasoline stocks will approach a peak of 1,700,000,000 gallons this month.

Fuel oil and kerosene demand held steady in February, but domestic purchases of lubricants fell off sharply, declining 21.6 per cent from 67,381,215 gallons (2,173,910 daily average) in January to 49,397,889 gallons (1,703,375 gallons daily average) in February.

If it is true, as is often stated, that demand for lubricating oils is a barometer of industrial conditions, then the severe drop in February may be quite significant. Demand in that month was smaller than in any previous month since April, 1922, when it fell to 41,440,475 gallons. In February, 1923, domestic demand was 57,268,183 gallons, exceeding the corresponding month this year by nearly 8,000,000 gallons. The peak of demand in 1923 was in May, with 74,255,380 gallons.

Lubricant demand accurately reflected the industrial depression in the winter of 1920-21, as the following statistics show:

Domestic Demand for Lubricants

	Gallons
Nov. 1920	50,457,165
Dec. 1920	30,657,787
Jan. 1921	24,559,412
Feb. 1921	24,080,256
Mar. 1921	36,358,547
Apr. 1921	27,434,505
May 1921	41,805,493
June 1921	48,652,533

While other industries are proceeding cautiously in the present unsettled stiuation and while many of them are curtailing output and inventories, the industry is driving ahead at top speed, carrying the heaviest inventories, in its history—487,184,756 barrels of crude and refined oils, Feb. 29, 1924: perhaps not far from 495,000,000 barrels at the date this is written, April 10.

Instead of declining, the current supply of crude oil (production plus imports, minus exports) has increased since the first of the year. The daily average in January was 1,975,161 barrels, in February 2,063,828 barrels, in March (estimated) 2,100,000 barrels.

Higher prices for crude oil, established since Jan. 1, 1924, have spurred producers to a very active drilling campaign, countrywide in its scope, in both proven and wildcat areas. The inevitable result is more oil—and we are getting it and will get more as the weeks pass and the weather continues to improve.

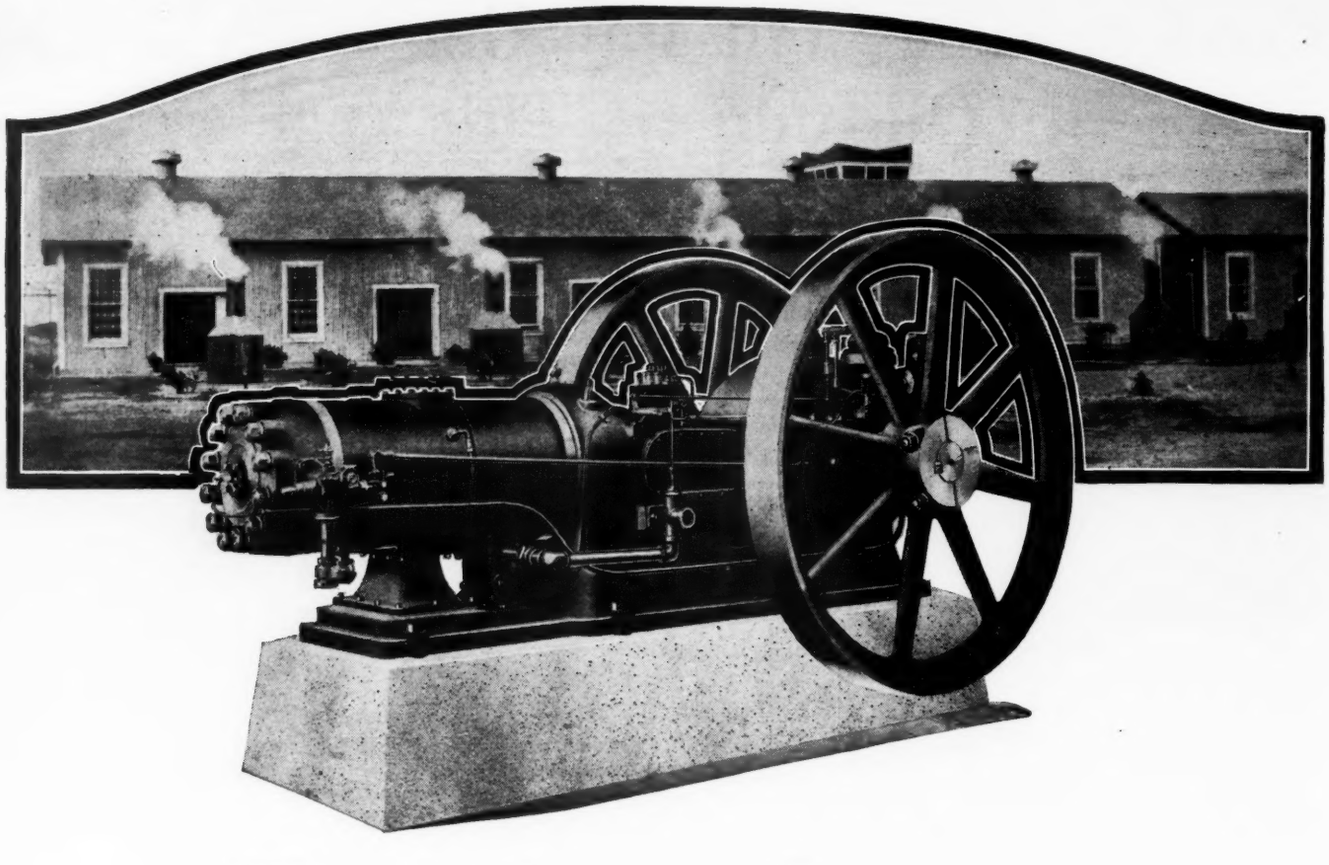
The discovery and development of important new sources of production this spring and summer will have a tendency to upset the delicate equilibrium existing between demand and supply. The tremendous oil inventories now being carried by the industry are a factor of great importance to be considered in such an eventuality.

It is becoming increasingly evident that prices and profits in the oil industry this year will be governed by general industrial conditions. Expressed in another way, the prosperity of the oil industry for the remainder of 1924 is dependent upon the trend of general industry.

"Holly" Reavis, for many years publisher of an oil trade paper, points out some exceedingly important points for the oil industry's consideration in the accompanying article.

Showing the enormous inventories being carried by the industry and the rapid rate at which they are being increased, together with the disappointing demand for petroleum products in February and March (estimated) and the increased drilling activity that strong prices for crude are sure to bring with the coming of favorable weather, Mr. Reavis believes that the prosperity of the oil business this year is very largely dependent on the prosperity of industry in general in this country.

Every oil man can well afford to think over carefully the points brought out and then guide his course accordingly. —Editor.



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Good Appearances Maintained To Boost Oil And Grease Business

By Roger B. Stafford
STAFF REPRESENTATIVE

ST. LOUIS, April 25

KEEPING up appearances may sound like the practice of some social climber but when applied to business, it is a good policy, the growth of the Columbia Oil Co. of St. Louis indicates.

The Columbia lays claim to having the best equipped lubricating oil and grease plant west of the Mississippi river. It prides itself in the color and clearness of its products as well as the quality. It markets its oils and greases in good looking lithographed cans. And the policy of good appearances is extended to the company's salesmen who cover their territories in coupes of two popular makes.

The Columbia compounding and blending plant is less than a year old and has risen from the ashes of a plant that burned April 1, 1923, a few days after the momentous spring convention of the National Petroleum Marketers Association last year.

Cleanliness is a virtue at the Columbia plant and nothing is allowed to accumulate that might prove to be a fire hazard or that might detract from the general appearances of the plant. But with all this, the company is in the oil and grease business to make money, and economy of operation is sought along with convenience.

Pumps Oil Only Once

One of the chief features of the plant E. J. Keitel, president and general manager, points out, is the fact that oil received at the plant needs to be pumped only once, and that once from the tank car to the storage tanks. After that gravity is the force that propels the oil through all processes down to the barreling. However, the oil lines are so arranged that if the oil has to be returned to any tank into which it cannot flow by gravity, it may be pumped.

A pump house is now being completed which has two manifolds connecting with the plant's 24 storage tanks. Valves in the lines are either numbered or lettered according to whether they are in the lines leading to tanks of unblended or finished oils. The tanks have corresponding numbers or letters. The plant now has two steam pumps and an electrically driven pump is to be installed for use in summer when it would be unnecessary to carry a steam head sufficient to operate a pump. The motor of the electric pump also will be connected with an air compressor—an item of economy.

Another feature of the plant is a barrel cleansing machine. This is a home made affair but it has been proved to be better than anything on the market for the reclamation of drums, Mr. Keitel says.

The machine consists of a semi-cylindrical tank about 10 feet long and five feet in diameter. This is filled to about two thirds capacity with a strong soda solution. Two barrels may be washed at a time. These are fastened to a rotating device, being clamped obliquely to the axis of the rotater. They are held in place by four stays. The oblique setting is to enable each end of the barrel to be alternately raised and lowered through the solution. Motive power is supplied by a ½ horse power motor. The soda solution is kept hot by a jet of live steam from the boiler.

When an old drum is received at the Columbia plant it is vacuum cleaned. A special high suction cleaner is used. This has a long wand and all parts of the inner walls of a drum may be reached. All loose dirt is taken out by this cleaner, even nails are drawn out.

The barrel then is put into the washing machine and all oil and grease is washed out. If the barrel is rusty on the inside a foot or two of iron chain is put in. This serves as a polisher as well as a rust remover. The bung is left open so the soda solution may flow in and out of the revolving barrel. Besides this action, the oblique setting causes the solution to dash back and forth through the barrel.

Vacuum Again Applied

The steam jet keeps the solution hot and when the barrels are removed from the machine they are rinsed with hot water. They then are set at an angle so that any water is drained to the edge. After they are cool and any water remains on the inside, the vacuum is applied again. This removes all water. The suction machine is equipped with a moisture trap so that the water is not drawn into the receptable for the dry dirt.

Any rust on the outside is removed with a wire brush and the barrel is ready for painting after any leaks have been stopped.

When customers supply their own drums and these are dirty, a charge of 25 cents is made for the cleansing, or 50 cents for cleansing and painting.

The compounding and blending building is of two-story brick and concrete construction. The first floor is on a level with freight car and motor truck floors. The offices are at one end of the second floor and protected from the compounding and blending kettles and tanks by a fire wall. Beneath them is the laboratory. The main stairway is enclosed by fire walls.

The cleansing department is on the second floor and barreling of oil is done on the first floor so as to utilize gravity. Empty barrels are conveyed from the first to second floor and back to the first by means of a mechanical conveyor which operates in one direction only but which is equipped with combination baskets, designed by Mr. Keitel, which permit the carrying of barrels either up or down.

Make Own Kettles

The compounding kettles also were made by the company, with oil and steam valves and other controls located where the operator may reach any of them without changing his position. The revolving agitators were made by a churn manufacturer. There are 18 compounding tanks in which a total of 22,000 gallons of oil may be worked up at the same time.

The 24 storage tanks have a combined capacity of 250,000 gallons. Ten of the tanks are enclosed in a brick building with enough steam radiation to keep them at a temperature of 90 degrees even on the coldest days. The 14 outside tanks are supported on steel beams by walls of masonry. This installation is part of the old plant. Beneath these tanks is space for storage.

Empty barrels are stored in a one-story building a few yards from the compounding plant. The company also has in the open about 1000 drums which went through the fire and which must be reclaimed before they can be used.

The boiler house is in a small brick building adjoining the compounding plant. Fuel oil is used and is stored in a concrete tank under the barreling plant. The oil is conveyed from there to a small service tank suspended over the boiler where it is preheated before burning.

The barreling department has 32 automatic barrelers which enable the company to rush any order through.

Mr. Keitel fell heir to the business on the death of his father several years ago. He was then only 24 years old and only casually acquainted with it. The business consisted wholly of lubricating oils. When the old plant burned last year it was decided to add greases to the company's line of "Colco" and "Blizzard" oils. The greases bear the trade name "Viscus".

Ordinarily the company employs 10 salesmen but when output was cut off

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by the fire the number was reduced to six. The sales force is again being built up. Besides its barrel and can trade the Columbia also sells in bulk.

Columbia has several hundred agents scattered through the middle west. Many of these are in villages and are engaged in positions where they come in contact with most of the people of their communities more or less frequently.

These agents are sold the oils and greases at prices higher than the prices at which jobbers may buy the company's products but which allow them sufficient margin to stimulate an active interest in pushing the Columbia oils and greases.

Dr. Rittman Is Making Power Survey

PITTSBURGH, April 24.—Dr. Walter F. Rittman, of the commercial engineering department of the Carnegie Institute of Technology, well known to the oil industry as an oil technologist, is engaged in making a power survey of Pennsylvania for Governor Pinchot. The survey is to cover the industrial power used in the state for the past 20 years and attempt will be made to project it to 15 or 20 years into the future.

Interest of the oil industry in this power survey, Dr. Rittman believes, would center largely in the treatment of coal for the extraction of oil, and the possibilities of increased use of the internal combustion engine.

"It will not be so long," says Dr. Rittman, "before we find an overlapping of the coal and oil industries. We may find ourselves supplying a considerable portion of our oil requirements from the distillation of coal, which would mean not only valuable oil recoveries but would mean a greater fuel economy. This is practically a new field of approach and great interest is being centered in the relatively few major results in this direction, the more notable of which is the Henry Ford low temperature project.

"Second, it may develop that the internal combustion engine will become a more important factor in the power development for certain uses. At the present time I do not see the use of this type of installation for the big city plants but the object of a survey such as ours is to consider the state as a whole and since conditions throughout the state are not the same it would mean that different installations would be used in different parts of the country."

PAULS VALLEY, OKLA., April 24.—Three companies have filling stations under construction here. One is being built for the Magnolia Petroleum Co., one for Marland Refining Co. and one for the Service Oil Co. All three companies have storage tanks installed here.

Middle States Elects New Directors

NEW YORK, April 25.—The five men whose election as directors of the Middle States Oil Corp. was advocated by President P. D. Saklatvala in a special letter to stockholders, were elected at the recent meeting in New York. They are:

W. R. Willcox, New York, former chairman of the National Republican Committee; John H. Brown, banker of Oneida, N. Y.; John F. Casey, construction engineer of Pittsburgh; C. B. Peters, Tulsa producer, and N. G. Pearsall, a vice-president of Middle States. The last two were re-elected.

Considerable opposition arose at the meeting over the acquisition of control in Southern States Oil Corp. by Middle States through an issue of $5,500,000 notes extending over a term of five years. But this opposition was overcome by explanations by officers of the corporation.

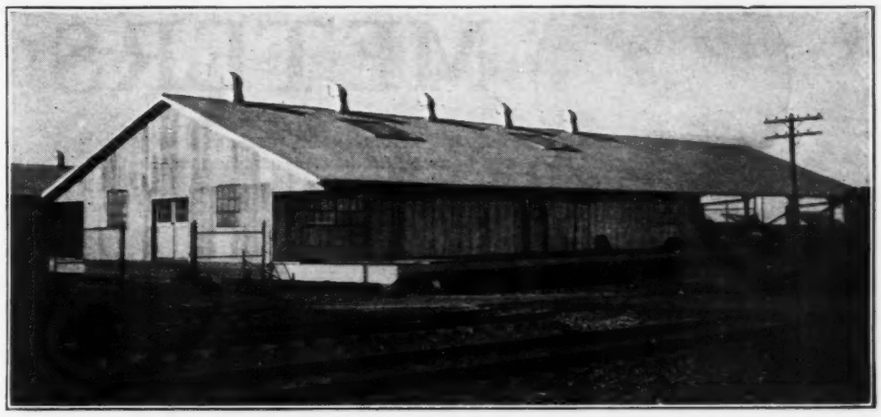
Mr. Saklatvala read a tentative balance sheet which he said was based on engineers' appraisals and subject to adjustment. In it the corporation's oil properties were carried at $30,328,121, the Louisiana and North Western railroad at $3,678,000 and the Wyoming-Montana railroad at $4,136,159. Cash totaled $381,314, accounts receivable $198,246 and other assets sufficient to bring the total to $39,575,897.

The funded debt was shown to be $10,392,419 including the notes for the acquisition of Southern States stock. Payments due on the Wyoming railroad amounted to $639,569 and on the Louisiana road to $197,655. Surplus representing the Middle States stock issued totaled $26,551,926, from which a minority interest estimated at $8,398,717 was to be deducted.

William N. Cannon, counsel for Middle States, responding to an inquiry, said the corporation had advanced funds to the contractor building the Wyoming road When a certificate of necessity is issued by the Interstate Commerce Commission, a holding company will be organized, he said, and securities issued on the commission's authority. In this company, Middle States will hold not less than 76 per cent and possibly 100 per cent of the stock, depending on adjustments.

It was denied by President Saklatvala that the acquisition of the Southern States stock had anything to do with the margin account in that stock of C. N. Haskell, former chairman of the board of Middle States.

LEROY, KAN., April 24.—The opening of a filling station built here for J. M. Holmes, was to have taken place the past week. A quart of motor oil was to be given free to every patron that purchased five gallons of gasoline. Mr. Holmes is also offering a price of five gallons of gasoline to the person that sends in the most appropriate and desirable name for his new station.



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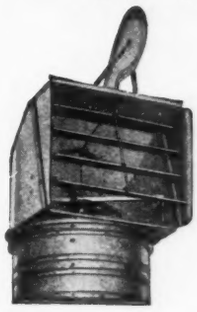

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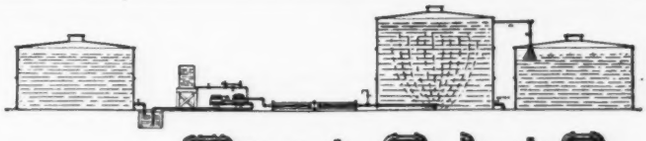

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The Future Of The Natural Gasoline Industry In California

By Charles F. Bevan

Presented At The Third Annual Convention Of The Association Of Natural Gasoline Manufacturers, Tulsa

TULSA, April 25

TO ESTIMATE the future development of the natural gasoline industry in California, we must first summarize the conditions existing during the past year. Only upon such a summary and consideration of present conditions can a forecast be based.

At the beginning of 1923 the three great fields of the Los Angeles Basin were undergoing a most extensive drilling campaign. The wells were prolific in production of high gravity oil and great quantities of gas. There were in January, 1923, 32 gasoline plants in operation, and 15 additional plants under construction in these fields.

The greater number of these plants in southern California were of the oil absorption type, with a few combination high pressure compression and absorption plants in use. There were many varieties of designs due to the sudden influx of gasoline plant men from all over the country. The general plan of the plants built was uniform, the variations being in the filler for absorbers and construction of heat exchangers and stills.

The majority of plants were designed to utilize gas direct from the traps at the wells which maintained sufficient pressure to permit plants to be operated at pressures varying from 20 to 60 pounds. The residue gas from most of the plants was wasted to the air.

Production of natural gasoline in the remainder of the state had shown a gradual increase until at the close of 1922 there were 67 plants in the more settled productive areas. The total number of plants in the state was 100 with an estimate production of 450,000 gallons daily from the treatment of over 475,000,000 cubic feet of gas. It is interesting to note the development of the natural gasoline industry during the past year as shown by the following data which shows production for the territory south of the Tehachapi:

Date 1923	Gas Treated m. cu. ft.	Gasoline Produced gallons
January	202	117,000
February	296	188,500
March	418	233,000
April	409	239,000
May	540	278,000
June	576	355,000
July	725	381,000
August	833	443,000
September	916	472,000
October	894	529,000
November	865	530,000
December	885	580,000
1924		
January	779	524,000

This enormous sudden increase in production naturally brought down the price. Notwithstanding this, the activity continued with no apparent abatement until in May, 1923, the older fields were partially or wholly shut down. This was followed by concerted action on the part of producers in the Los Angeles Basin to curtail activities until the overproduction period was passed.

The drop in price of crude and gasoline was anticipated but the continued low gasoline price was felt keenly by the producers.

The peak of crude oil production was reached in August, while the natural gasoline production peak came in December, 1923. This peak amounted to approximately 580,000 gallons of natural gasoline daily as against 530,000 gallons daily in November, 1923, the next highest month.

During 1923, additional plants were constructed and placed in operation until at the peak, there were 135 plants producing natural gasoline in the state.

The following table gives the distribution of these plants with approximate daily productions and volumes of gas treated during February, 1924:

Location	No. Plants	Vol. Gas in M. Cu. Ft.	Gasoline Prod.
Coalinga	1	1,000	1,000
Sunset-Midway	31	95,850	124,600
Santa Fe Springs	28	242,000	222,000
Long Beach	17	235,000	156,000
Huntington Beach	16	60,000	65,000
Richfield	3	15,500	19,000
Torrance	8	11,600	7,600
Santa Maria	4	11,100	20,000
Ventura	7	10,000	9,900
Coyote Hills	7	1,655	1,500
Fullerton	7	16,350	19,000
Salt Lake (abandoned)	4	4,350	3,300
Newhall	1	260	780
Montebello-Whittier	5	4,960	1,800
Total north of Techachapi	32	96,850	125,600
Total south of Techachapi	107	612,775	525,880
Grand total for state	139	709,625	651,480

Coincident with the peak of gasoline production came the sudden drop in oil production and gas volume and pressure. The volume dropped literally millions of cubic feet per day. One producer admitted a drop in volume of gas treated at a single plant of nine million feet per day, or a drop of 12 per cent of volume of gas treated. This drop was covered by a two-day period and was due to the sudden loss of pressure throughout the field and not to the loss of any particular group of wells.

The small operator whose plants were built hurriedly to extract gasoline, but with low efficiency, from the excess gas available, found himself almost over night with a plant and no gas. Those who were able immediately set about installing compressing machinery and rebuilding their plants on a more efficient basis. But machinery was hard to obtain and expensive, and a great many of the companies were forced to relinquish their contracts and abandon their plants.

About this time the Torrance-Redondo and Lomite fields were in the rush development stage and several small operators moved plants to this field, thereby gaining temporary relief from the necessity of abandoning operations.

The larger operators with the installation of machinery took over the gas relinquished by these smaller operators and have, in most cases, been able to maintain production on a profitable basis. The recent increase in price, however, marks the actual turning point for the better from the producers standpoint.

Production Near Normal

The older fields have again been opened up and poduction is now 80 per cent normal in the settled production areas. These fields have added their gasoline production to maintain a high average daily production.

The Los Angeles Basin fields are still declining, although the production curve is flattening out and I believe it is safe to say that production will drop off much more gradually during the next few years.

One condition which has already caused considerable controversy and has placed many obstacles in the path of the healthy development of the industry is that of royalty rates. Many of the newly formed companies in bidding for gas have offered excessively high royalties which, in the eyes of the inexperienced oil producers, offer much greater returns than the more conservative rate offered by the established operators.

These high rates are usually based upon an inaccurate method of test as applied to the gasoline content of the gas from various sources and actual gallonage based upon plant sales. The more established operators know the conditions, and from previous practice know that a lower rate of royalty with an accepted accurate method of test and a greater plant efficiency, together with an established market for the gasoline produced, offer greater actual cash royalty value.

High Royalties Cause Failures

But convincing the small operator is quite another matter. Many plant failures have been caused by the high royalties paid and a spot market for the gasoline produced. On the other hand,

Quick Service

Gets each car out of the way in double-quick time and the place open for more—and the quicker the service the bigger the profits.

No waiting at the pump when Quick Service Oil Bottles are at hand—no fidgeting by the driver while an old style measure is being filled and emptied—just what the name implies, quick service cleanly given.

And a couple of trays at the pump not only mean quick service but suggest fresh oil to the customer as his gas tank is being filled.

Try a few!

You furnish the bottles—Milk Bottles—they fit the hand.

Spouts		Trays	
Six	$2.00	For 6 Bottles	$1.00
Eight	2.65	For 8 Bottles	1.35
Twelve	3.60	Not including spouts	

C. C. Van Tine
Bartlesville Oklahoma

42 years Scientific Refining

H. B. S.
MOTOR OILS

A high grade product

WRITE OR WIRE
- FOR SAMPLES -
AND QUOTATIONS

The National Refining Co.
National Headquarters: National Bldg.
Cleveland, Ohio

many producers have been dissatisfied after hurriedly making contracts with small operators who were unable to meet the terms of the contract and continue operation. A great need is seen for an accepted standard form of contract and rate of royalty such as prevailed in the Mid-Continent fields.

The days of marketing as natural gasoline anything recovered from gas by compression and cooling, or absorption, are passing. The term is becoming one which means a hydrocarbon series having certain specified characteristics. These characteristics will tend to make the producers much more careful of their plant control and development.

The refiners appreciate the value of natural gasoline as a blending agent for the high gravity oils now being produced yield profusely of gasoline, the product being very low in gravity with practically no light material which is required for a perfect motor fuel. This light or low initial boiling point material must be supplied from natural gasoline. The chain of distillation must, however, be uniform, and for this reason the specifications which will govern the price and market for natural gasoline must be worked out very carefully.

At the present time the operators on the west coast are not stabilizing their product, although several companies are experimenting with apparatus for this purpose. With the development of this equipment the gasoline producer will fortify himself with the refiner and will be enabled to see a continued market for his product.

Consumption Is Heavy

The consumption of California gasoline now varies from approximately 3,000,000 gallons per day in the winter months to 3,500,000 in the summer months. This enormous consumption forces the refineries to their maximum output. Nearly all refineries are now making additions to their present plants or are building new plants at more advantageous locations. From this it would appear that they are anticipating greater consumption in the future.

With the drop in total oil production of the state, the raw material from which the finished product is to be obtained must be furnished by the development of new fields now being prospected, or by the importation of crude from other sources. The same result may be obtained by increased efficiency in refining methods.

In any event the natural gasoline manufacturer apparently faces a period of increased activity to produce a sufficient supply of natural gasoline to meet the refiner's needs. This will to some extent offset the crying demand for specification material, as should the supply become to small to meet the demand, the refiners will accept material which may not be as perfect as desired, but which can furnish the much needed light fractions.

Much prospecting is being carried on in all parts of the state. Fields which have made good showings are Torrance-Redondo, Compton (now being called Dominquez), and Wheeler Ridge. Extensive work is being done at Rosecrans, Rideout Heights, Maricopa Flat, Anaheim and Balboa. Torance is the only one of these fields yet to have gasoline production. There are now seven plants in this field which are apparently operating at a disadvantage, as the gas volume is not holding up as well as was expected.

At Compton the Union Oil company is contemplating the erection of a plant. Meanwhile the gas is being treated by a small independent operator.

The New Mexico and Colorado fields may play an important part in the future development of the indnstry in the west, as should these fields be extensive, California offers the nearest outlet to the world markets.

Jewett & Sowers Occupy Newly Bought Plant

CHICAGO, April 24. — Jewett & Sowers Oil Co., of Chicago, recently moved its executive offices from 20 West Jackson St. to 633 West Pershing road, where the company acquired a site and a lubricating oil plant formerly operated by the Power Oil Co., not now doing business. This makes the third storage plant for Jewett & Sowers in Chicago. One is at Eighteenth st. and Wentworth av., one of the closest oil plants to the Chicago Loop district. The second is at Division and Halstead sts., serving the northwest quarter of town.

Jewett & Sowers did not buy out the Power Oil Co. The land was bought from the property owner with the lubricating oil plant on it. The Power Oil Co. had operated under the provisions of a lease. Charles Roobaart, head of the Jewett & Sowers Co., declines to name the price paid for the property but states that he got a bargain. The plant was in rather a run-down condition and remodeling has been in progress since it was bought last December. The offices were not occupied by the new owners until last week.

Now operating offices are maintained at each of the three bulk stations, but the company no longer has headquarters in the Loop. The new telephone number is Boulevard 5710. All the equipment and machinery of the old Power Oil Co. will be operated. Compounding is already in progress. Gasoline, kerosene and fuel oil storage is being built on the Pershing road property which has frontage on the trackage of the Chicago Junction Railroad. Jewett & Sowers is about the oldest firm in the retail fuel oil business in the city, having entered the game when tank wagons were drawn by horses.

The compounding machinery acquired from the Power Oil Co. is said to be exceptionally good. The Power Oil Co. was the western branch of the New York Lubricating Co., or at any rate made and sold Monogram oils in this territory. The present owners are not acquainted with the circumstances surrounding the other company's discontinuance of business.

On The Lazy Bench

First Golfer—Confound it, sir, you nearly hit my wife.

Second Dub—Did I? Well, you take a shot at mine.

—Stanolind Record.

x x x

Visitor (from city)—Don't you think this radio broadcasting is a great invention?

Farmer—Not so much. We've had a party line for years.

—Stanolind Record.

x x x

Farmer—Well, son, what are you doing up in that tree?

Son—Just got a letter from the sophomores in correspondence school telling me to haze myself.

—Stanolind Record.

x x x

Our Advice is Wear 'Em The Year Around

Having gone to Florida expecting its seasonal cold wave this spring, a Chicago oil man found himself unprepared for the "90 in the shade" weather he encountered there. After 24 hours of misery he wired the following code message to his understanding wife: "SOS-BVD-PDQ."

x x x

"A man is a good deal like a motor," says Homer Brew. "When he begins knocking, it's a safe bet that something is radically wrong with his internal mechanism."

—Ventura Mission

x x x

Teacher—"Now, Willie, take the words plane, saw and hatchet and make a sentence containing all three."

Willie—"That's easy. The plane chicken saw an egg and tried to hatchet."

—Stanolind Record.

x x x

"Willie, can you tell the class what shape the world is?"

"Pa says it's in a hell of a shape."

—Stanolind Record.

"The Village Blacksmith"

(1924 Model)

By Percy Waxman

UNDER an ad for gasoline
The village smithy stands;
He's agent for the Jinx machine
And several other brands.
He hasn't shod a horse for years,
For fear he'd soil his hands.

He wears a gold watch on his wrist,
A pearl pin in his tie,
His links are made of amethyst
The finest he could buy.
There's not a thing the smithy wears
That doesn't please the eye.

Week in, week out from morn till night,
He sees the autos come
With brakes that are not working right
And axles on the bum.
With gas, repairs, and grease and oil
He makes a tidy sum.

He has a staff of skillful men
That number twenty-four
Who toil from six a. m. till ten
And sometimes even more.
The smithy never does a stroke—
He thinks that work's a bore.

The children coming home from school,
Look in at the open door,
And laugh to see some city fool
Set up an awful roar
When called to pay some whopping bill
The smith has soaked him for.

He goes on Sunday to the kirk,
His mind quite free from cares,
Because his men are hard at work
With punctures and repairs.
And if the weather's fine and warm
The smith says grateful prayers.

Oiling—refilling—repairing,
Onward through life he goes
And never once despairing
So long as his income grows.
Each night the thought of some one done,
Augments his sweet repose.

—Harper's Monthly

x x x

Willis—You know that excuse you told me to spring on the boss when I was late this morning?

Gillis—Yes. I said it was a sure-fire excuse. Wasn't it?

Willis—It was. He sure fired me.

—Stanolind Record.

x x x

"What are you crying for, my lad?"

"Cause farver's invented a new soap substitoot an' every time a customer comes in I get washed as an advertisement."

—Stanolind Record.

x x x

The universe pays the man in his own coin; if you smile, it smiles upon you in return; if you sing, you will be invited into gay company; if you think, you will be entertained by thinkers and if you love the world and earnestly seek for the good that is therein, it will pour into your lap the treasures of the earth.

—Stanolind Record.

Flexlume Gets Injunction

And Order for Accounting—Other Infringers Again Warned

SEVERAL months ago we notified the trade in advertisements that the patent covering our standard raised, glass letter, double face sign, had been sustained and infringement decreed.

Enforcement of the decree was delayed by an effort made by the infringing defendants to have the case reviewed by the United States Supreme Court. This move was unsuccessful. By the refusal of the Supreme Court to intervene we are now, for the first time, in a position to *enforce* the rights which the decree had previously established.

The trade will accordingly take notice that injunctions against the Opalite Sign Company and the Mid-City Electrical Service Company have been served and orders entered by which these infringers are required to account to us for the profits which they have made and the damages we have sustained.

Let there be no mistake or misapprehension of our intention similarly to enforce our rights and to prosecute, and obtain damages for, infringements by others—including sign builders who buy letters for use in infringing signs.

To Purchasers of Electric Signs

If you buy a sign with the FLEXLUME imprint through an authorized FLEXLUME distributor you not only get a sign which is artistically correct and mechanically the best in its every detail of workmanship and material, but you are also absolutely protected in its use.

Flexlume Corporation

1120 Military Rd., Buffalo, N. Y.

THE Sinclair trade-mark has back of it men of recognized proficiency who understand your oil requirements thoroughly. They know how Sinclair Oils must meet your specifications scientifically. With such constantly vigilant and experienced personnel behind the Sinclair Trade Mark you are always sure of complete satisfaction with Sinclair Products. Personnel proficiency is the foundation of Sinclair success in oil operations.

SINCLAIR REFINING COMPANY
New York: Sinclair Oil Bldg., 45 Nassau St.
Chicago: 111 West Washington St.
Cable Address: "Lucent"

REFINERY-TANK WAGON MARKETS

Gasoline Weaker in Mid-Continent; Kerosene Demand Is Brisk

Staff Special

TULSA, April 26

GASOLINE has weakened rapidly in the Mid-Continent refinery market during the past week as a growing number of refiners began to dump goods on an unreceptive buyers' market. Prices today are fully ½ cent per gallon lower than at the close of business last Saturday and the market gives evidence of seeking even lower levels.

With the exception of kerosene, heavier oils have been soft with fractional recessions in prices. Lubes are quiet and soft. Fuel oil is selling at 5 cents per barrel below the price of last week.

The purchase of 2,000,000 gallons of new Navy gasoline for export movement made Wednesday by the Sinclair Refining Co. failed to halt the market in its downward course. The buying made no more than a ripple although orders were scattered throughout the field in both Oklahoma and north Texas. About half of the amount was bought in each state.

Small Cargo Moved

It is understood that Sinclair moved out a small cargo of gasoline from its Westwego terminal last week and that the present order is calculated to replace the material withdrawn from storage. There have been no other export inquiries or orders in the field during the week although refiners have made attractive offers to this class of buyers in the hope of finding an outlet for bulk goods.

Exporters assert that their storage is full and that tank ships must call to lift present storage and new business be written before they can buy additional quantities. They do not express much hope of being able to buy extensively in the near future.

On the domestic side jobbers are buying only for current needs. They appear to have reached the conclusion that the present buyers' market is not immediately in danger of swinging over into a bull movement. There is no tendency on their part to stock up in advance for late spring and early summer demands.

Although jobbers have been buying in limited quantities during recent weeks, this scattered buying has been bulking up larger than sales earlier in the year for both domestic and export movement. Sales have been growing gradually larger from week to week as shown by the statistical report of the Western Petroleum Refiners Association. It is to be expected that in coming weeks sales will increase more rapidly than they have during the past four weeks even though jobbers may continue hand to mouth buying.

The following statement of production and shipments of gasoline (in gallons) from 144 refineries in the Mid-Continent with a daily still capacity of 537,400 barrels per day is interesting in showing the gradual growth of sales:

Week Ended	Production	Sales
March 1	26,292,498	17,198,927
March 8	25,275 934	17,945,849
March 15	26,989,505	21,072 634
March 22	27,563,698	19,378,962
Total 4 weeks	106,121,635	75 596,372
March 29	28,143,950	21,768,152
April 5	26,072,922	29 492,077
April 12	26,127,835	19,271,063
April 19	28,327,038	22,179,885
Total 4 weeks	108,671,745	92 711,177

It will be noted from the foregoing tabulation that gasoline shipments increased 17,114,805 gallons during the four weeks ended April 19, as compared with the previous four weeks, an increase of 22 per cent. Production increased 2 per cent as well, this being largely due to the opening of plants which had been shut down.

During the four weeks ended April 19, the reporting refineries produced a daily average of 3,881,133 gallons of gasoline and sold 85 per cent of that amount. Gasoline stocks increased at the rate of 570,020 per day. During the previous four weeks daily average production was 3,790,058 gallons and sales 2,699,870 gallons, indicating that stocks increased at the rate of 1,090,188 gallons per day.

Few Exports Recently

It should be remembered that the second period of four weeks saw virtually no gasoline moving from Mid-Continent plants into export channels. The previous four weeks there was a more or less steady outlet in that direction. If domestic shipments could be segregated it would be found that they have increased much more than 22 per cent.

In spite of the better showing being made, the statistical position of the Mid-Continent refiner is still far from being desirable. Stocks of gasoline on hand are far above the amount which can be comfortably carried in view of refinery credits. That fact is driven home when it is known that the present reduction in tank car quotations has been entirely due to forced liquidation of inventories of weaker plants.

The most urgent necessity of Mid-Continent refiners at the present moment is a reduction in crude runs to a point where current production can be entirely absorbed and a portion of storage oils be worked off. Instead of that, recent weeks have seen the reopening of plants which have been shut down, thus raising the total throughout of the field as a whole.

Chestnut & Smith Corp. has recently opened its plant at Sand Springs after keeping it idle for more than two years. The Mutual Oil Co. is opening the plant of Sapulpa Refining Co. and has begun to run crude while testing and making repairs. Purchase of the Grandfield Oil & Refining Co.'s plant by the Superior Oil Corp. forecasts the probable reopening of that refinery.

Hope is Still Held

General belief in the Mid-Continent is that it is not yet too late to save the gasoline market if prompt steps are taken to curtail production until orders take up the slack in the market. Unless that is done soon, it is predicted in many quarters that the market is in danger of a serious setback.

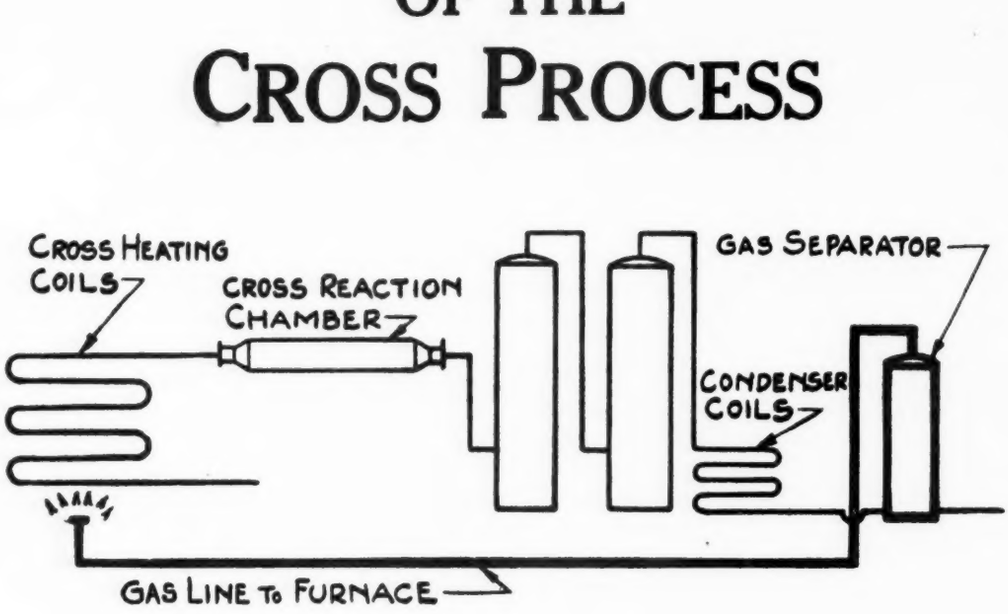
It is not generally doubted that a little later in the season plants which have large inventories such as Cosden & Co. will be forced to liquidate by pushing their goods in the open market. Cosden was unable to reduce his stocks effectively last year on account of demoralized markets and has some gasoline which has been carried for a year or more. While a large company such as Cosden must always retain a fair reserve stock it is believed that present inventories are considerably above an adequate level for almost any emergency.

Entry of Cosden into the spot market probably need not be expected immediately and yet it is a future possibility which should be taken into account by refiners when they pile up larger storage to care for the peak season. At a time like this when the Indiana tank wagon market is hanging in the balance, Cosden certainly can not be expected to enter and to help break down the market on which the bulk of its production moves under marginal contract.

Tank Wagon Prices Wobbly

It is generally conceded that the Indiana tank wagon cannot be expected to be held at its present level if the job-

THE FUEL CONSUMPTION OF THE CROSS PROCESS



FIXED Gas is bled from the CROSS PROCESS to the furnace. Less than 3% is the fuel consumption of the CROSS PROCESS because the CROSS PROCESS generates its own fuel after the unit is on stream, and therefore the fuel consumption is limited to the oil consumed to bring the unit to operating temperature.

THE M. W. KELLOGG CO.

90 West Street
New York City

Branch Offices:
700 Baltimore Ave., Kansas City, Mo.
304 Lane Mortgage Bldg., Los Angeles, Cal.

ber's spread becomes much wider. Many believe that the Indiana company would be forced to reduce prices if Navy goes below 10 cents per gallon and remains for many days.

An Indiana tank wagon cut would be extremely unfortunate at the opening of the motoring season. It would tend to peg the market for a more or less extensive period at the time of the year when the refiner expects to make his profits.

High gravity gasoline produced by many refiners while exporters were still in the market are a heavy burden now on the hands of such plants. Prices have been reduced a full cent below the last export prices paid without bringing in new orders. Outlook for this material to the domestic trade is constantly diminishing as warm weather approaches. Refiners are eliminating the high gravity cuts now and are turning their attention to the production of Navy with some 56-58, 450 end point gasoline.

Natural gasoline markets have not weakened in proportion to straight run goods. The number of manufacturers in distress is apparently very limited and concessions are not generally offered to obtain orders. Grade A is selling at approximately the same prices as a week ago. There is some Grade B offered out at 8½ cents per gallon although many manufacturers will not sell at less than 8¾ cents. Grade C is steady at 7¾ to 8 cents per gallon. Blended gasolines are not moving.

Kerosene is Brisk

Kerosene business continues brisk with jobbers on the far north buying and others through the Mississippi valley seeking new supplies for replacement in storage. The average selling price of 41-43 water white is 4¼ to 4¾ cents per gallon. The 42-44 grade is extremely scarce selling at 4¾ to 4⅞ cents per gallon except in southern Oklahoma where some can be bought for ⅛ cent less.

Fuel movement remains reasonably good. Stocks are bing worked down in Texas where prices have been extremely weak while in Oklahoma current sales have about taken care of production. In spite of that fact refiners are competing for business and making lower prices from day to day. It is possible to buy some fuel at 92½ cents today although most refiners are asking 95 and 97½ cents for the 24-26 grade. Some 20-22 fuel has sold at 90 cents this week.

Gas oil has been steady at 3 to 3⅛ cents per gallon. Burning distillate production is generally being thrown in with the gas oil without weakening the latter product appreciably. Cracking demand is not rushing in view of the soft condition of the gasoline market.

Crude Association to Meet

OIL CITY, PA., April 28.—A meeting of the members of the Pennsylvania Grade Crude Oil Association will be held May 9 in the William Penn hotel, Pittsburgh. The association has around 800 members, Secretary R. J. Alexander reports. Of this number 33 are refiners and the remainder producers. A large number of jobbers have become associate members.

Mid-Continent Refinery Operations Week Ended April 19

TULSA, April 26

MID-CONTINENT refiners increased their crude runs 7000 barrels per day during the week ending April 19, according to the Western Petroleum Refiners Association report covering operations of 144 plants with a daily still capacity of 537,400 barrels.

Increases were made in Oklahoma and Kansas only, slight declines being shown in Texas and Louisiana and Arkansas. In Kansas the 26 reporting refineries increased their runs 4000 barrels per day to 48,578 barrels or 56 per cent of their rated capacity of 86,600 barrels.

The increase of nearly 3000 barrels per day in Oklahoma was probably due to the opening of one plant which had been shut down. During the week the 62 reporting plants were running 147,533 barrels per day or 55 per cent of their rated capacity of 266,700 barrels.

Gasoline production at all plants increased 8.4 per cent over the previous week to a total of 28,327,038 gallons. This figure is the largest which has been reported by the association thus far this year exceeding the last week in March by approximately 200,000 gallons.

Shipments of gasoline increased in Oklahoma, Louisiana and Arkansas. In Kansas gasoline shipments were 4,600,000 gallons, a decrease of 13.8 per cent from the previous week but still slightly above production for the week. Texas refiners sold only 4,000,000 gallons or 57.7 per cent of their output for the week, increasing stocks 3,000,000

Oklahoma shipments increased 51 per cent to a total of 12,500,000 gallons or 81.2 per cent of their production of 15,400,000 gallons.

Kerosene sales were greatly larger in all fields except Kansas where stocks are at an extremely low point, representing only about 8 days' supply at the current rate of consumption.

Texas refiners increased their sales 140 per cent over the previous week and sold more than twice their production of 1,300,000 gallons. Oklahoma refiners reduced their stocks 500,000 gallons to 11,800,000 gallons. The Mid-Continent district as a whole, sold 26 per cent more kerosene than it produced and cut reserves to 23,300,000 gallons.

Fuel oil sales increased 22 per cent in the district as a whole although Kansas refiners showed a very minor accumulation of stocks. Texas refiners reduced their stocks as a result of their sales campaign by 4,000,000 gallons and the stocks of the entire group were cut 3,000,000 gallons to 120,600,000 gallons.

Summary of Western Petroleum Refiners Ass'n Report, Week Ended April 19, 1924

	KANSAS	%Change over previous week	OKLAHOMA	%Change over previous week	TEXAS	%Change over previous week	LA.-ARK.	%Change over previous week	TOTAL	%Change over previous week
Plants reporting	26		62		44		12		144	
Capacity (Bbls.)	86,600		266,700		137,900		46,200		537,400	
Daily Average Charge to Stills, Week 4-12	43,534		144,645		105,754		18,756		312,669	
Daily Average Charge to Stills, Week 4-19	48,578	+11.58	147,533	+ 2.00	105,583	— 0.14	18,053	— 3.75	319,747	+ 2.26
GASOLINE (Gals.)										
Stocks, 4-12	17,647,137		109,893,133		50,399,353		7,918,023		185,857,648	
Production, 4-12 to 4-19	4,638,331	+ 8.70	15,467,290	+ 8.11	7,018,270	+10.47	1,203,147	+ 0.26	28,327,038	+ 8.42
Sales, 4-12 to 4-19	4,691,402	—13.82	12,562,862	+51.36	4,046,216	—15.04	879,405	+15.00	22,179,885	+15.09
Stocks, 4-19	17,594,066	— 0.30	112,797,561	+ 2.64	53,371,409	+ 5.90	8,241,765	+ 4.09	192,004,801	+ 3.31
Ratio Sales to Production	101.1%		81.2%		57.7%		73.1%		78.3%	
KEROSENE (Gals.)										
Stocks, 4-12	1,517,566		12,327,296		9,615,274		1,517,328		24,977,464	
Production, 4-12 to 4-19	1,402,566	— 2.27	3,258,252	+22.54	1,324,927	+14.12	333,415	+25.03	6,319,160	+14.44
Sales, 4-12 to 4-19	1,180,310	—13.42	3,771,815	+ 8.46	2,932,153	+140.20	95,562	+20.76	7,979,842	+30.01
Stocks, 4-19	1,739,822	+14.65	11,813,733	— 4.17	8,008,046	—16.72	1,755,181	+15.68	23,316,782	— 6.65
Ratio Sales to Production	84.2%		115.8%		221.3%		28.7%		126.3%	
GAS AND FUEL OIL (Gals.)										
Stocks, 4-12	7,983,064		53,570,065		50,134,445		12,608,187		124,295,761	
Production, 4-12 to 4-19	5,714,935	+ 2.96	16,430,136	— 1.88	12,239,354	—29.47	1,882,543	—21.95	36,266,968	—13.78
Sales, 4-12 to 4-19	5,290,149	— 0.53	14,019,030	+ 6.16	15,982,077	+36.30	4,646,207	+92.98	39,937,463	+22.29
Stocks, 4-19	8,407,850	+ 5.32	55,981,171	+ 4.50	46,391,722	— 7.47	9,844,523	—21.92	120,625,266	— 2.95
Ratio Sales to Production	92.6%		85.3%		130.6%		246.8%		110.1%	

Companions!

Watch for These Marks on Every Waverly Container

Pennsylvania Oils from the Pennsylvania fields with the Waverly trade-mark and Pennsylvania Grade Crude Oil Association insignia; backed by the national advertising of the Pennsylvania Grade Crude Oil Association, the Business Paper advertising of the Waverly Oil Works Company will sell more Oil for Distributer and Jobber alike.

Sell Waverly Products in branded containers and "cash in" on the extensive advertising of "The Highest Grade Oil in the World."

Under proper guarantees we will appoint exclusive local distributers.

AUTOMOBILE OILS
INDUSTRIAL OILS
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SOLUBLE OILS
REFINED WAX
TUR-MIN-TINE
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A 1000 PAGE HANDBOOK

of untold value to refiners, distributers and jobbers will be sent to any of the above on request. Extra copies and individuals—Price $1.00.

Waverly Oil Works Company

5409 FIFTY-FOURTH ST. PITTSBURGH, PA.

Established 44 years

BY INVITATION MEMBER OF RICE LEADERS OF THE WORLD ASSN. MEMBER OF PENNSYLVANIA GRADE CRUDE OIL ASSN.

Guaranteed 100% PURE PENNSYLVANIA OIL

Refinery Markets On Light Oil Products

Pennsylvania, Oklahoma, North and South Texas, Louisiana, Arkansas

GASOLINE AND NAPTHA

PENNSYLVANIA	Prices Apr. 28	Prices Apr. 21	Prices Apr. 14
50-52 Naptha	12½-12⅝	12⅝-12¾	12⅝-12¾
54 Naptha	12⅝-13	13 -13¼	12¾-13
58 Gasoline	13 -13¼	13¼-13⅝	13¼-13⅝
60 Straight-run gasoline	13¾-14¼	13¾-14¼	13¾-14¼
62 Straight-run gasoline	14¼-14¾	14¼-14¾	15 -15½
64 Straight-run gasoline	15 -15¼	15 -15⅝	16 -16½
68 Straight-run gasoline	17 -17⅝	17¾-18	17⅝-18
68-70 Blend, 450 E. P.	12⅝-13	12⅝-13	12⅝-13
60-62 Blend, 450 E. P.	12⅝-13	12⅝-13	12⅝-13
62-64 Blend, 450 E. P.	12⅝-13	12⅝-13	12⅝-13
66-68 Blend, 440 E. P.	12¾-13¼	12¾-13¼	12¾-13¼
68-70 Blend, 440 E. P.	12¾-13¼	12¾-13¼	12¾-13¼
68-70 Blend, 420 E. P.	13 -14	13 -14	13 -14
OKLAHOMA			
48-50 450 E. P. naptha	10 -10¼	10 -10¼	10 -10¼
50-52 450 E. P. naptha	10 -10¼	10 -10¼	10 -10¼
56-58 450 E. P. gasoline	10 -10¼	10¼-10¾	10½-10¾
58-60 (New Navy) 437E.P.131 i.b.p.	10¼-10¾	10¾-11	10¾-11
60-62 400 E. P. gasoline	11½-11¾	11¾-12	11¾-12
64-66 375 E. P. gasoline	12½-12¾	12¾-13	13 -13¼
68-70 350 E. P. gasoline	12¾-13	13¼-13½	13¼-13½
NORTH TEXAS			
48-52 450 E. P. naptha	10 -10¼	9¾-10¼	10 -10¼
56-58 450 E. P. gasoline	10 -10¼	10 -10¼	10¾-10¾
58-60 450 E. P. gasoline	10½-10¾	10½-10¾	10¾-10¾
58-60 New Navy gasoline	10¼-10¾	10¾-10¾	10¾-11
60-62 400 E. P. gasoline	11¼-11½	11¾-12	11¾-12
64-66 390 E. P. gasoline	12¼-12½	12¼-12¾	12¾-13¼
64-66 375 E. P. gasoline	12½-12¾	12½-13	13 -13½
68-70 350 E. P. gasoline	12¾-13	13¼-13½	13¼-13¾
NORTH LOUISIANA			
58-60 450 E. P. gasoline	10½-10¾	10¾-11	10¾-11
58-60 437 Navy Gasoline	10¾-11	11 -11¼	11 -11¼
64-66 390-400 E. P. gasoline	12¾-13	13 -13¼	13¼-13¾
ARKANSAS			
58-60 450 E. P. gasoline	10¾-11	11 -11¼	10¾-11
58-60 Navy gasoline	11 -11¼	11¼-11½	11 -11¼
64-66 375 E. P. gasoline	12½-12¾	13 -13¼	13¼-13½

NATURAL GASOLINE

OKLAHOMA			
Grade A, 72-78 375 E.P.,90% Rec.	9½- 9¾	9½- 9¾	9¾-10
Grade B, 76-82 375 E.P.,85% Rec.	8½- 8¾	8½- 8¾	8¾- 9
Grade C, 80-88 350 E.P.,78% Rec.	7¾- 8	8 - 8¼	8 - 8¼
Grade D, 88-92 350 E.P.	7¾- 8	8 - 8¼	8 - 8¼

(Motor Natural Gasoline—Blends)

OKLAHOMA	Prices Apr. 28	Prices Apr. 21	Prices Apr.
Grade 1, 58-62 437 E.P.,91% Rec.	9½- 9¾	9¾-10	10 -10¼
Grade 2, 58-62 450 E.P.,90% Rec.	9½- 9¾	9¾-10	10 -10¼
Grade 3, 66-64 440 E.P.,88% Rec.	9½- 9¾	9¾-10	9¾-10
Grade 4, 66-70 435 E.P.,85% Rec.	9½- 9¾	9½-10	9¾-10
NORTH TEXAS			
Grade A ,72-78 90% Rec.*	9¼- 9½	9½- 9¾	9¾-10
Grade B, 76-82 85% rec.*	8¼- 8½	8½- 8¾	8¾- 9
Grade C, 80-88 78% rec	7¾- 8	8 - 8¼	8 - 8¼

*F. O. B. Breckinridge

(Motor Natural Gasoline—Blends)

Grade 1, 58-62 437 E. P.	10 -10¼	10 -10¼	10 -10¼
Grade 2, 58-62 450 E. P.	9¾-10	10 -10¼	10 -10¼

BURNING OILS

PENNSYLVANIA			
45 Water White	6½- 6¾	6¾- 7	6¾- 7
46 Water White	7¼- 7½	7¼- 7½	7¼- 7½
47 Water White	8 - 8¼	8 - 8½	8 - 8½
300 Burning Oil	7 - 7½	7½- 8	7¼- 7½
OKLAHOMA			
40-42 Prime White Dist.	4 - 4¼	4 - 4¼	4 - 4¼
41-43 Water White	4¼- 4½	4¼- 4½	4¼- 4½
42-44 Water White	4¾- 4¾	4½- 4¾	4½- 4¾
NORTH TEXAS			
40-42 Prime White Distillate	4 - 4¼	4 - 4¼	8¾- 4
41-43 Water White Kerosene	4¼- 4½	4¼- 4½	4 - 4¼
42-44 Water White Kerosene	4½- 4¾	4½- 4¾	4¼- 4½
NORTH LOUISIANA			
41-43 Water White Kerosene	4¾- 5	5 - 5¼	5 - 5¼
ARKANSAS			
41-43 Water White Kerosene	4¾- 5	4¾- 5	5¾- 5
42-44 Water White Kerosene	5 - 5¼	5 - 5¼	5 - 5¼

Above prices are f. o. b. refinery in tank car. They are the prices at which the bulk of the products on the open market move. Whoever has knowledge of any open market prices on any considerable quantity of goods differing from the foregoing, will favor us with this information.

Small Town Jobbers Again Buying Gasoline In Chicago Market

CHICAGO, April 26.—The widespread distribution of gasoline to town and village and country place for 1924 has begun. This is not bullish propaganda and has not much bearing on the recognized over supply of refined material. As a matter of fact buying was active among the jobbers last week but the volume was not large. The good news is that jobbers in small towns are in the market at last, now that many dirt roads are passable and rural motoring has started. These jobbers are small, however, and their purchases are small. Jobbers who operate over extensive territories and who have large storage, are not buying, although their service station sales are improving.

Storage of big jobbers is pretty well filled just now. They have been getting more on marginal contract than they could sell. Now they are waiting for the market to go down further. The big fellows will be back in the market in due course, and in the meantime it is comforting to observe that the rural dealers who have been isolated by mud and snow all spring are coming to light. Some refinery sales departments in Chicago report that already the number of gasoline sales for April has reached twice that of March, but the volume of business transacted is no greater than it was in March.

Whereas the small jobber's purchases are timed with the date of exhaustion of his storage tank, the big jobber buys when the price suits him. There is a belief that prices will be lower before the summer rise occurs, so distributors who can stay out of the market are doing so. There is plenty of gasoline available through the Chicago market at 10½ cents a gallon. A few refiners are holding for 10¾. On the other hand a few jobbers are demanding goods at 10¼.

Kerosene market has slowed down a little since the early part of the week. Any refiner could get 5 cents for good water white stuff on Tuesday, but not on Friday. Material good enough to run a tractor was offered at 4½ cents in Group 3 during the latter part of the week, but 42-44 could not be had for less than 4¾ and some refiners claim to be getting 5¼ for small shipments. There are certain refiners in this market who specialize on kerosene to please the fastidious, and among them they monopolize the refined oil market when it is dull, and collect a premium when the buyers are plentiful.

Distillate for domestic fuel is dull. The item appears on sales sheets at 3½ to 3¾ cents but buying is light. Many domestic oil burners are not being used now, and those supplied by small jobbers are using kerosene. Gas oil is quoted at 3¼ cents, which price can be shaded. Business in gas oil is light. Gas companies are not buying to any great extent and skimmers have lots of hope of selling it to trackers this year.

Fuel oil of 24-26 gravity, less than 1 per cent sulfur, from Group 3, is offered at $1 a barrel along with a stiff sales talk in certain quarters, but business is poor. Industrials are not running to capacity and their needs are minimized. In fact there are places where good 24-26 Oklahoma fuel can be had for 95 cents. That is as cheap as Smackover crude fuel, and still Smackover is scarce.

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HERE is a liquid manufactured and compounded strictly according to specifications of the Underwriters' Laboratories—a fire extinguishing liquid in which you can place absolute confidence.

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It comes packed in handy gallon cans of 1, 2, 3 and 5 cans to the case; also in quarts of 12 and 20 to the case; and 50-gallon drums.

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Republic of Mexico

OCECO

Refinery Markets On Lubricants, Heavy Oils

Pennsylvania, Oklahoma, North and South Texas, Louisiana, Arkansas

NEUTRAL OILS

PENNSYLVANIA	Prices Apr. 28	Prices Apr. 21	Prices Apr. 14
(Viscous Test 70)			
220 Vis. No. 3 Asso. Filt.	-34	-35	-34½
200 Vis. No. 3 Assoc. Filt.	30½-31	30¾-31¼	31½-32
180 Vis. No. 3 Assoc. Filt.	28½-29	29 -29½	29½-30
150 Vis. No. 3 Asso. Filt.	26½-27	27 -27½	27½-28
(Non-Viscous)			
34 350-360 Flash	7½- 8	8 - 8½	8½- 9
36 Miners Neutrals 300-305 Flash	6½- 7	7¼- 7½	7½- 8
OKLAHOMA			
(Viscous Test 100)			
70 Vis. at 100°F.No. 2½-3 color	4½- 5	4¾- 5	4¾- 5
100 Vis. at 100°F. No. 2 color	5¾- 6½	6 - 6½	6 - 6½
100 Vis. at 100°F.No.2½-3 color	5 - 6	5¾- 6	5¾- 6
150 Vis. at 100°F.No.3 color	12½-13	12½-13	12½-13
150 Vis. at 100°F.No.4 color	12 -12½	12 -12½	12 -12½
180 Vis. at 100°F.No.3 color	15 -15½	15 -15½	15 -15½
180 Vis. at 100°F.No.4 color	14¼-14¾	14¼-14¾	14¼-14¾
180 Vis. at 100°F.No.5 color	13½-14	13¾-14	13¾-14
180 Vis. at 100°F.No.6 color	12¾-13¼	12¾-13¼	12¾-13¼
200 Vis. at 100°F.No.3 color	16 -16½	16 -16½	16 -16½
200 Vis. at 100°F.No.4 color	15¼-15¾	15¼-15¾	15¼-15¾
200 Vis. at 100°F.No.5 color	14½-15	14½-15	14½-15
200 Vis. at 100°F.No.6 color	13¾-14¼	13¾-14¼	13¾-14¼
220 Vis. at 100°F.No.3 color	17 -17½	17 -17½	17 -17½
220 Vis. at 100°F.No.4 color	16¼-16¾	16¼-16¾	16¼-16¾
220 Vis. at 100°F.No.5 color	15½-16	15½-16	15½-16
220 Vis. at 100°F.No.6 color	14¾-15¼	14¾-15¼	14¾-15¼
240 Vis. at 100°F.No.3 color	18 -18½	18 -18½	18 -18½
240 Vis. at 100°F.No.4 color	17 -17¾	17 -17¾	17 -17¾
240 Vis. at 100°F.No.5 color	16½-17	16½-17	16½-17
240 Vis. at 100°F.No.6 color	15¾-16¼	15¾-16¼	15¾-16¼
280 Vis. at 100°F.No.3 color	20½-21	20½-21	20½-21
280 Vis. at 100°F.No.4 color	19½-20	19½-20	19½-20
280 Vis. at 100°F.No.5 color	18½-19	18½-19	18½-19
280 Vis. at 100°F.No.6 color	17½-18	17½-18	17½-18
300 Vis. at 100°F.No.6 color	20 -20½	20 -20½	20 -20½
SOUTH TEXAS			
(Viscous Test 100; cold test 0)			
100 Vis. No.2 Color Unfilt. Pale	10½-11½	10½-11½	10½-11½
150 Vis. No.2½ Color Unfilt.Pale	13 -14	13 -14	13 -14
200 Vis. No.3 Color Unfilt. Pale	15 -16	15 -16	15 -16
300 Vis. No.3 Color Unfilt. Pale	17 -18	17 -18	17 -18
500 Vis. No.3½ Color Unfilt. Pale	19 -20	19 -20	19 -20
750 Vis. No.4 Color Unfilt. Pale	25 -26	25 -26	25 -26
200 Vis. No. 2 Filt. Pale	-25	-25	-25
300 Vis. No.2 Color Filt. Pale	-28	-28	-28
500 Vis. No.2½ Color Filt. Pale	-31	-31	-31
750 Vis. No.2½ Color Filt. Pale	-41	-41	-41
200 Vis. No.5½ Color Red Oil	13½-14½	13½-14½	13½-14½
300 Vis. No.5½ Color Red Oil	15½-16½	15½-16½	15½-16½
500 Vis. No.6 Color Red Oil	17½-18½	17½-18½	17½-18½
750 Vis. No.6 Color Red Oil	23 -24	23 -24	23 -24

CYLINDER OILS

PENNSYLVANIA	Prices Apr. 28	Prices Apr. 21	Prices Apr. 14
600 Steam Refined	22 -22½	22 -23	22½-23
635 Steam Refined	-26	25 -26	-25½
650 Steam Refined	-27	26½-27½	-27
600 Flash	-30½	30 -31	29½-30½
600 Warren E	26 -27	-27	-25½
600 Oil City E	-25	-25	-24½
600 Filtered D	-30½	30½-31	-31
Cold Test Stocks (bright filtered)	38 -40	38 -40	39 -40
Cold Test Stock (dark filtered)	34 -36	34 -36	37 -38
Black Oil	7½- 8	- 8	- 8
OKLAHOMA			
Bright Filtered Stock	29 -34	29 -34	29 -34
Medium Filtered Stock	20 -21	20 -21	20 -22
600 Steam Refined Olive Green	10 -10½	10½-11	11 -11½
600 Steam Refined Dark Green	8½- 9	9 - 9½	9 - 9½
Black Oil	4¼- 4½	4¼- 4½	4¼- 4½

WAX

PENNSYLVANIA			
(Per Pound New York)			
122-124 White Crude Scale	5½- 5¾	- 5¾	5½- 5¾
124-126 White Crude Scale	5¾- 5⅞	- 5⅞	- 5¾
OKLAHOMA			
(Per Pound Group 3)			
124-126 White Crude Scale	5⅜- 5½	5 - 5¼	5 - 5⅛

FUEL OIL

PENNSYLVANIA			
36-40 Fuel Oil	5⅜- 5¾	5½- 5¾	5⅜- 6
30-34 Fuel Oil	5¼- 5⅜	- 5½	5¼- 5⅜
OKLAHOMA			
38-40 Straw Distillate	3⅜- 3⅝	3⅜- 3⅝	3⅜- 3⅝
36-38 Straw Distillate	3¼- 3⅜	3¼- 3⅜	3¼- 3⅜
32-36 Gas Oil (Gal.)	3 - 3⅛	3 - 3⅛	3 - 3⅛
24-26 Fuel Oil (bbl.)	92½-97½	.95-1.05	1.00-1.05
Fuel Oil, buyers, cars (bbl.)	.90- .95	.90-1.00	.95-1.00
20-22 Fuel Oil (sellers)	.90- .95		
40-50 Asphalt Content Road Oil	1.15-1.25	1.15-1.25	1.20-1.30
50-60 Asphalt Content Road Oil	1.25-1.35	1.25-1.35	1.30-1.40
60-70 Asphalt Content Road Oil	1.35-1.45	1.35-1.45	1.35-1.45
NORTH TEXAS			
38-40 Straw Distillate	3½- 3¾	3½- 3¾	3¼- 3½
32-36 Gas Oil (gal.)	3 - 3⅛	3 - 3¼	2¾- 3
24-26 Fuel, per bbl	.90- .95	.90-1.00	.95-1.00
South Texas Fuel	1.95-2.10	1.95-2.10	1.95-2.10
South Texas Gas Oil	5 - 5¼	5 - 5¼	5 - 5½
NORTH LOUISIANA			
32-36 Gas Oil (Gal.)	3¼- 3½	3¼- 3½	3⅜- 3¾
22-26 Fuel Oil (bbl.)	.95-1.00	.95-1.00	.95-1.00
ARKANSAS			
38-40 Distillate	3½- 3¾	3¾- 4	3⅝- 3⅞
32-36 Gas Oil	3¾- 3⅞	3½- 3¾	3⅜- 3¾
22-26 Refinery Fuel Oil	.95-1.05	1.00-1.05	1.00-1.05
Smackover Crude Fuel	.90- .95	.90- .95	.90- .95
East Field Crude Fuel	- .95	- .95	- .95

Above prices are f. o. b. refinery in tank car. They are the prices at which the bulk of the products on the open market move. Whoever has knowledge of any open market prices on any considerable quantity of goods differing from the foregoing, will favor us with this information.

Increase In Inquiries Firms Pennsylvania Gasoline

CLEVELAND, April 28.—Inquiries for gasoline were more numerous in western Pennsylvania today. These caused prices to firm but the movement of motor fuel was not as large as refiners have hoped for the season.

During the last week gasoline has been quiet. Weather was much better after Tuesday in the territory served by the Pennsylvania plants but the air remained cool and dirt roads did not dry out enough to make motoring on them a pleasure. More and more automobiles are being put into service in cities and where roads are hard surfaced but gasoline demand on refineries has not yet reached the point where stocks begin to recede. Service station trade is becoming good.

Many Pennsylvania refiners believe that eastern crudes are too high in relation to western crudes. In proof of this they point out that Mid-Continent Navy gasoline has been offered at 13½ cents delivered into western New York which means a price of less than 10 cents in Group 3. Of course this is distress goods but it puts the delivered price for the western goods almost on a level with what Pennsylvania plant operators say is too low for them to operate on.

Cylinder stocks and wax were a little easier today reflecting a let-up in buying in the New York market but no general downward movement of prices for these products is feared because most refiners have orders for cylinder stocks that will take up their output until in June and wax orders sufficient to absorb production until late in June or the first of July.

Neutrals generally are less active than a week ago. Refiners who had some good orders on their books are optimistic and maintaining their quotations. Some believe prices will move forward soon and are quoting ½ to 1 cent higher than the market. Others are less optimistic and have been granted concessions in order to move their goods. Some 150 viscosity No. 3 neutral was moved at 25½ cents or just 1 cent lower than the inside prices of the larger manufacturers.

There has been a fair demand for kerosene. One refiner reported sales last week totaled more than double those of the preceding two weeks combined. Others have been less fortunate and have made small concessions in order to lower their kerosene stocks.

(Kentucky Market Story on page 105)

Bunker Oil Advances 10 Cents; Export Market Is Dull

By Special Correspondent

NEW YORK, April 28.

BUNKER oil took another 10-cent jump last week, and at the close of the week most of the leading refiners were asking $1.85 per barrel. f. o. b. New York harbor refinery. One or two factors were still willing to sell at $1.75. The upward movement in Mexican crude is largely responsible for the continued strength in bunker oil. Stocks here are small, and both export and domestic buyers are showing an active interest, although apparently reluctant to purchase heavily in an almost empty market.

Diesel oil was strong. The Standard Oil Co. of New Jersey is asking $2.73 per barrel at the refinery for this oil but Tide Water is quotitng $2.51. Stocks are rather small, while consumption is heavier than expected.

The recent cut in gasoline export prices had an unfavorable effect. Most of the big European buyers now feel that the market will break, and are holding off for lower prices. Only one cargo sale was heard of. This included 35,000 barrels of Navy and 64-66 gravity for June shipment out of the Gulf at prices reported to be 12¼ and 15¼ cents, respectively. An Independent was credited with the sale.

Local export prices are still more or less nominal and susceptible to shading. Refiners are more pessimistic regarding the outlook regardless of the big improvement in the demand from jobbers. New Navy was offered freely at 14¾ cents a gallon in tank cars delivered to the trade whereas during the previous week the asking price was 15¼ cents.

The consensus of opinion is that with the first signs of an advance there will be a heavy export demand. Cased gasoline was flat and featureless. Oriental buyers were inquiring in a fair way but interest was purely academical. The price in steel barrels to garages is unchanged at 20 cents a gallon, but it is persistently rumored that shading is going on.

Kerosene Is Weaker

Kerosene has weakened considerably. At the Gulf prime and 44 gravity water white is quoted in cargoes at 6 and 6¼ cents, respectively, but in conjunction with gasoline 5¾ and 6½ cents can be done. Refiners reported a dearth of both inquiries and orders. There is more pressure to sell. Stocks abroad are ample, according to returning oil men, while domestic requirements are not particularly large. The call for cased kerosene was small, and activity was chiefly against standing contracts. Water white in single tank cars delivered to the local trade is quoted at 8¼ cents but on a firm bid 8 cents could have been done.

Gas oil is one of the few firm products. There were two bulk sales of 26-28 gravity at the Gulf at 5 cents a gallon, for June shipment to Germany. Both sales were made by large Independents. One called for 28,000 barrels and the other 35,000 barrels. Refiners are confident that the demand for this oil will continue good for some time to come and there was little or no pressure to sell. French buyers were inquiring in a fair way while one of the leading refiners expects to close a cargo of 35,000 barrels, with a United Kingdom buyer some time this week. The movement in 28-34 gas oil was fairly good. The Standard Oil Co. of New Jersey is asking around 6 cents a gallon for this oil at the refinery, but Tide Water is quoting 5½ cents and for 36-40, 6 cents, refinery.

New York Market

The following prices are quoted by eastern seaboard independent refineries on products which are manufactured from Mexican crude transported from Tampico to the refinery by tanker and from California crude.

	Apr. 28
*Gasoline (New Navy) gal., Tank Cars	$14¾–15
‡Bunker oil (F. O. B. New York) bbl.	1.75–1.85
Diesel Oil F. O. B. Refinery bbl.	2.31–2.73
Gas Oil (36-40 refinery) gal.	.06–.08
†Kerosene, 45-150 W.W.Bulk Del.,N.Y.	.08¼

*Delivered.
†Nominal.
‡Plus .06¼ charge lighterage.

Export Markets

Furnished by big exporting oil companies. No actual sales. Record for statistical purposes only.

Illuminating Oils

	Apr. 28	Apr. 21
Bulk, gal., Bayonne	6.50	6.50
Barrels, gal., Bayonne, cargo	13.50	13.50
Cases, gal., Bayonne	16.90	16.90

Prices for water white oil (150 test) are 1 cent higher than those for standard white.

Gasoline-Naptha
(Cents per Gallon)

U. S. Navy, dead bulk	14.00	14.00
U. S. Navy, cases	28.15	28.15
Export Naphtha bulk	15.25	15.25
63-66 deg. bulk	17.00	17.00
66-68 deg. bulk	18.50	18.50

Tide Water Oil Company
(f. o. b. Bayonne)

58-59 deg. bulk	14.50	14.50
58-59 deg. cases	28.15	28.15
Export grade, Navy Specifications bulk	14.00	14.00
63-65 deg. bulk	17.00	17.00
68-72 deg. bulk	19.50	20.50

	Bulk	Barrels	Cases
Standard white 110	6.50	13.50	16.90
Water white 150	7.50	14.50	17.90

The Texas Company

Gasoline, cases		28.15	28.15
Kerosene	**Bulk**	**Barrels**	**Cases**
Standard White	6.50	13.50	16.90
Prime White	7.00	14.00	16.40
Water White	7.50	14.50	17.90

Lubricating oils were easier and refiners were more inclined to consider counter bids. Pennsylvania cylinder stocks were less active than during the previous week. For 600 s. r. in barrels, New York, the asking price ranged from 30 to 33 cents a gallon. Export buying was confined to lots of a few hundred barrels here and there. Western 600 s. r. was held at 18½ to 19 cents a gallon, cooperage basis, New York. Spindle oils were dull and easy while paraffin oils failed to show much life.

The waxes were generally about ¼ to ½ cent pound lower. There was comparatively little buying interest shown during the week. On Saturday leading refiners were offering 122-124 A.m.p., white crude scale at 5½ cents while fully refined 118-122 was available at 5¼ cents. Match waxes were dull and easy, in fact conditions were just the reverse of the previous week.

Petrolatums displayed comparatively little life. Demand for export was light and spasmodic while local manufacturers of medicinal preparations showed little inclination to purchase beyond nearby requirements. Snow white was held at 13½ to 15 cents.

Medicinal oils were dull and a trifle softer. Demand for Russian oil, however, was better towards the close of the week. Consumers are not showing much interest in domestic oils.

Sustains Tank Car Ruling

NEW YORK, April 25.—An application of transportation companies for a rehearing and re-argument in the case of the Mathieson multi-unit tank car has been refused by the Interstate Commerce Commission.

In a decision dated Jan. 31, 1924, the commission approved the multi-unit car for the shipment of Liquid Chlorine and ruled that this car was entitled to the same freight rates and privileges as any other tank car. The commission now refuses to change this ruling.

Over two years previous to this decision when the Mathieson Alkali Works, Inc., placed this specially-designed car in service, the carriers refused to allow it tank car rates and privileges. The Mathieson company appealed to the Interstate Commerce Commission for removal of this discrimination and up until the recent favorable ruling was forced to pay out a total of over two hundred thousand dollars in excess freight charges in order to continue shipping liquid chlorine in the multi-unit car.

BELTON, MONT., April 29.—Otis H. Alderson has opened up the Belton service station here for the season. The roads are drying up fast and tourists are beginning to move. This station is at the west gateway to Glacier National Park and advance information indicates that travel will be very heavy this season, Mr. Alderson says.

Tank Wagon, Service Station Markets

Gasoline and Kerosene

BELOW are given in cents a gallon, the tank wagon price of gasoline without the special taxes levied against motor fuels by many states, the amount of the state taxes, the total tank wagon price, with tax added in and the service station or retail price of gasoline as quoted in the various Standard Oil marketing territories. The right hand column is the tank wagon price of kerosene. By tank wagon price is meant the price to resale agents or dealers. Usually this price does not apply to sales to consumers from tank wagons.

Prices in effect April 28

S. O. NEW JERSEY TERRITORY

	Gasoline T.W.	Tax	Total	S.S.	Oil T.W.
Atlantic City, N. J.	19.5	0	19.5	*	14
Newark, N. J.	19.5	0	19.5	*	14
Annapolis, Md.	19	2	21	*	13.5
Baltimore, Md.	19	2	21	24	13.5
Cumberland, Md.	19	2	21	24	13.5
Washington, D.C.	19	0	19	21	13.5
Danville, Va.	19	3	22	*	14.5
Norfolk, Va.	19	3	22	24	14
Richmond, Va.	19	3	22	25	14.5
Roanoke, Va.	19	3	22	24	14.5
Petersburg, Va.	19	3	22	*	14.5
Charleston, W. Va.	19	2	21	24	14.5
Clarksburg, W. Va.	19	2	21	*	14.5
Keyser, W. Va.	19	2	21	*	14.5
Parkersburg, W. Va.	19	2	21	*	13
Wheeling, W. Va.	19	2	21	24	14.5
Williamson, W. Va.	19	2	21	*	14.5
Charlotte, N. C.	19	3	22	25	14.5
Hickory, N. C.	19	3	22	*	14.5
High Point, N. C.	19	3	22	*	14.5
Mt. Airy, N. C.	19	3	22	*	14.5
Salisbury, N. C.	19	3	22	*	14.5
Charleston, S. C.	19	3	22	25	13.5
Columbia, S. C.	19	3	22	24	14.5

*Dealers set own prices. S. O. New Jersey does not operate station.

S. O. NEW YORK TERRITORY

*New York City	20	0	20	22.5	15
Albany, N. Y.	20	0	20	22.5	14
Buffalo, N. Y.	18.5	0	18.5	21.5	15
Rochester, N. Y.	17	0	17	22	13
Syracuse, N. Y.	19.5	0	19.5	22	12
Boston, Mass.	20	0	20	23	12
Augusta, Me.	20	1	21	23.5	14
Manchester, N. H.	20	2	22	24.5	14
Burlington, Vt.	20	1	21	23.5	15

*In steel barrels.

ATLANTIC REFINING TERRITORY

Pittsburgh, Pa.	20	0	20	25*	14
Philadelphia, Pa.	20	0	20	25*	14
Allentown, Pa.	20	0	20	25*	14
Scranton, Pa.	20	0	20	25*	14
Altoona, Pa.	20	0	20	25*	14
Dover, Del.	20	2	22	25	14
Wilmington, Del.	20	2	22	25	14
Providence, R. I.	20	0	20	23	14
Springfield, Mass.	20	0	20	23	14
Worcester, Mass.	20	0	20	23	14
Hartford, Conn.	20	1	21	24	14
New Haven, Conn.	20	1	21	24	14
Boston, Mass.	20	0	20	23	14

*Contains 2-cent tax collected by retail dealer and paid by him directly to state.

S. O. OHIO TERRITORY

All Ohio points	20	0	20	22	15

S. O. KENTUCKY TERRITORY

Lexington, Ky.	20	1	21	23	15
Louisville, Ky.	19	1	20	22	14
Covington, Ky.	20	1	21	23	15
Clarksdale, Miss.	19	1	20	22	14
Jackson, Miss.	19	1	20	22	12
Natchez, Miss.	18.5	1	19.5	21.5	13.5
Vicksburg, Miss.	18.5	1	19.5	21.5	13.5
Birmingham, Ala.	20	2	22	24	15.5
Mobile, Ala.	19	2	21	23	13.5
Montgomery, Ala.*	21	2	23	25	16.5
Atlanta, Ga.	19	3	22	26	14
Augusta, Ga.	21	3	24	26	14.5
Macon, Ga.	21	3	24	26	15.5
Savannah, Ga.	19	3	22	24	14
Jacksonville, Fla.	19	3	22	24	14
Miami, Fla.	21	3	24	26	15.5
Tampa, Fla.	19	3	22	24	14
Pensacola, Fla.	19	3	22	24	14.5

*Local privilege Tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included.

S. O. CALIFORNIA TERRITORY

Phoenix, Ariz.	20	3	23	26	21.5
Los Angeles, Cal.	14	2	16	19	15.5
Fresno, Cal.	15.5	2	17.5	20.5	17.5
San Francisco, Cal.	15	2	17	20	15.5
Reno, Nev.	18.5	2	20.5	23.5	19
Portland, Ore.	16	3	19	22	16.5
Seattle, Wash.	16	2	18	21	16.5
Spokane, Wash.	20	2	22	25	20.5
Tacoma, Wash.	16	2	18	21	16.5

S. O. LOUISIANA TERRITORY

	Gasoline T.W.	Tax	Total	S.S.	Oil T.W.
Camden, Ark.	17	4	21	23	13
Little Rock, Ark.	17	4	21	23	13
West Helena, Ark.	17	4	21	23	13
Alexandria, La.	17.5	1	18.5	21.5	13
Baton Rouge, La.	16	1	17	20	11.5
Lake Charles, La.	17.5	1	18.5	21.5	13
New Orleans, La.	16.5	1	17.5	20.5	9
Shreveport, La.	17.5	1	18.5	21.5	13
Bristol, Tenn.	20	2	22	24	15.5
Chattanooga, Tenn.	18.5	2	20.5	22.5	14.5
Knoxville, Tenn.	19.5	2	21.5	23.5	15
Nashville, Tenn.	17.5	2	19.5	20.5	13.5
Memphis, Tenn.	16	2	18	20	14

MAGNOLIA PETROLEUM TERRITORY

Muskogee, Okla.	18	2½	20.5	23.5	12
Oklahoma City	16	2½	18.5	22.5	11
Tulsa, Okla.	18	2½	20.5	23.5	11
Fort Smith, Ark.	14	4	18	22	13
Little Rock, Ark.	18	4	22	25	13
Texarkana, Ark.	17	4	21	24	13
Dallas, Tex.	17	1	18	21	10
El Paso, Tex.	17	1	18	22	13
Fort Worth, Tex.	17	1	18	21	11
Houston, Tex.	16	1	17	21	12
San Antonio, Tex.	15	1	16	18	10

S. O. INDIANA TERRITORY

Chicago, Ill†	18	0	18	20	12
Decatur, Ill.	18.2	0	18.2	20.2	12.5
East St. Louis, Ill.	17.1	0	17.1	19.35	11.6
Joliet, Ill.	18.4	0	18.4	20.4	12.7
Peoria, Ill.	18.2	0	18.2	20.2	12.5
Quincy, Ill.	18.2	0	18.2	20.2	12.5
Evansville, Ind.	18	2	20	22	12.5
Indianapolis, Ind.	18.2	2	20.2	22.2	12.7
South Bend, Ind.	18.4	2	20.4	22.4	12.9
Detroit, Mich.	18.8	0	18.8	20.8	13.2
Grand Rapids, Mich.	18.7	0	18.7	20.7	13.1
Saginaw, Mich.	18.9	0	18.9	20.9	13.3
La Crosse, Wis.	19.2	0	19.2	21.2	13.4
Madison, Wis.	18.3	0	18.3	20.3	12.5
Milwaukee, Wis.	18.1	0	18.1	20.1	12.2
Duluth, Minn.	19.2	0	19.2	21.2	13.6
Mankato, Minn.	18.8	0	18.8	20.8	13.4
Minneapolis, Minn.	18.9	0	18.9	20.9	13.6
Davenport, Ia.	18.5	0	18.5	20.5	12.9
Des Moines, Ia.	18.5	0	18.5	20.5	12.9
Sioux City, Ia.	18.1	0	18.1	20.1	12.5
Kansas City, Mo.*	17.9	1	18.9	20.9	11.3
St. Joseph, Mo.*	17.8	½	18.3	20.3	12.2
St. Louis, Mo*	17.1	½	17.6	19.9	12
Fargo, N. D.	19.6	1	20.6	22.6	15.6
Grand Forks, N.D.	20.2	1	22.2	24.2	15.9
Minot, N. D.	20.9	1	21.9	23.9	15.6
Huron, S. D.	20	2	22	24	14.1
Pierre, S. D.	20	2	22	24	14.1
Wichita, Kan.	17.8	0	17.8	19.8	11.8
Bartlesville, Okla.	16.9	2½	19.4	21.4	10.9

*Taxes levied by cities.

†Base tank wagon price; large dumps on sliding scale, see schedule in column to right.

S. O. NEBRASKA TERRITORY

Crawford, Neb.	19	0	19	*	15.25
Omaha, Neb.	18.25	0	18.25	20.25	12.5
McCook	19.75	0	19.75	21.75	14
Norfolk	18.75	0	18.75	20.75	13
North Platte	19.75	0	19.75	21.75	13.75
Scotts Bluff	19.25	0	19.25	21.25	13.25

*Standard has no service station here.

CONTINENTAL OIL TERRITORY

Denver, Colo.	19	2	21	23	14.5
Glenwood Sp'gs. Colo.	23	2	25	*	18.5
Pueblo, Colo.	19	2	21	23	14.5
Basin, Wyo.	21	1	22	*	15
Casper, Wyo.	19	1	20	22	13
Cheyenne, Wyo.	20.5	1	21.5	23.5	15
Cody, Wyo.	22	1	23	*	16
Lander, Wyo.	21	1	22	*	15
Sheridan, Wyo.	23	1	24	26	17
Billings, Mont.	21.5	2	23.5	25.5	16.5
Butte, Mont.	23	2	25	27	17
Great Falls, Mont.	23	2	25	27	18
Helena, Mont.	23	2	25	27	18
Miles City, Mont.	22.5	2	24.5	26.5	17.5
Missoula, Mont.	24	2	26	28	19
Ogden, Utah	21.5	2½	24	26	17.5
Salt Lake City, Utah	21.5	2½	24	26	17.5
Boise, Ida.	22.5	2	24.5	26.5	20
Idaho Falls, Ida.	23	2	25	27	19.5
Albuquerque, N. M.	23	1	24	26	17.5

*Continental has no service stations at these points.

Week's Price Changes Tank Wagon Market

TULSA, April 28.—Magnolia Petroleum Co. reduced tank wagon price of kerosene 1 cent at Muskogee April 21.

* * *

ROCHESTER, N. Y., April 26.—Standard Oil Co. of New York reduced the tank wagon price of gasoline ½ cent to 17 cents here April 18.

* * *

NEW YORK, April 23.—Standard Oil Co. of New York's kerosene tank wagon prices at Rochester, N. Y., Boston, and Burlington, Vt., are 13, 12 and 15 cents, respectively, the company has announced. Dates of changes were not given.

* * *

MEMPHIS, TENN., April 28.—The gasoline tank wagon price has been 18 cents including the 2-cent state tax on and from March 7.

Chicago Tank Wagon Scale

Following is the schedule of gasoline tank wagon prices of Standard Oil Co. of Indiana for deliveries in Chicago and suburbs of Chicago in Illinois.

Size of Dump	Price
1 to 99 gallons	18c
100 to 249 gallons	16
250 to 499 gallons	15.50
500 gallons or more	15.25

South Texas Market Firm

HOUSTON, April 26.—South Texas lubricant markets have been steady to firm.

TULSA, April 26.—Charles L. Sherwood, who, for the past four years, has been chief clerk in the scouting department of the Prairie Oil & Gas Co., here, has been transferred to Eldorado, Kan., where he will be connected with the land department under supervision of John M. Mouser. Mr. Sherwood's unfailing kindness and courtesy have made him popular among press representatives, who, while glad that he has been promoted, regret to see him leave Tulsa.

Kentucky Markets

Competition of distress gasoline from Group 3 and north Louisiana has made the gasoline market in Kentucky dull. Refiners are curtailing runs and belief is expressed that this will cause a strengthening of the motor fuel market as soon as the distress goods have been absorbed. Distress goods has been offered as low as 10 cents for immediate shipment and 11¼ cents over the whole of May. Gas oil situation is satisfactory; kerosene is holding up but fuel oil is not so strong. Central Kentucky gasoline prices have not been changed, 58-60 being quoted at 14½ cents while Navy at Louisville is 13. Kerosene is 7¼; gas oil 5-5¼, central Kentucky, and 6-6½ Louisville. Heavy fuel oil is 4 to 4¼ cents.

Only Kerosene Strong In North Texas

WICHITA FALLS, April 26.—North Texas refinery markets have been weak for several days as several refiners have sought to move accumulations of gasoline in storage. High gravity gasolines have suffered even more severely than Navy and summer competitive grades due to the fact that exporters have been out of the market for that class of goods.

It was estimated today by one refiner in Wichita Falls that a surplus of around 300 cars of 64-66, 375 end point gasoline is in storage in north Texas. This gasoline was manufactured in anticipation of further export movement.

Sinclair Refining Co. purchased 1,000,000 gallons of Navy in Texas this week for export which aided the market somewhat. It is stated by some refiners that Sinclair is expecting several tankers at New Orleans in the near future and may be able to buy more goods in May.

Kerosene has been by far the most active commodity. It is difficult to buy 41-43 water white at 4¼ cents today. Most refiners are sold up on kerosene for a week or more in advance.

Fuel oil is just about holding its own. In Burkburnett a little fuel has sold at 87½ cents per barrel. Generally speaking fuel is selling at 90 to 95 cents.

Spot crude is soft and refiners are not buying. It is reported that a number of plants curtailed their runs lightly last week and expect to make further cuts. It is understood that one plant released 2000 barrels per day of oil it had on open division order. No new contracts are being made over a period and premiums are not being paid.

Will Test Oil Burners

ST. LOUIS, April 28.—A committee has been appointed by the American Association of Oil Burner Manufacturers at the request of the Western Petroleum Refiners Association to cooperate with them in a series of tests on domestic oil burners to be conducted at the Bartlesville experiment station of the Bureau of Mines. The committee is comprised of P. S. Russel, Home Appliance Corp., St. Louis, chairman; A. N. Eaton, Winslow Boiler & Engineering Co., Chicago, and C. B. Finnell, Oliver Oil-Gas Burner Co., St. Louis.

TITUSVILLE, PA., April 28.—T. H. Westgate who became actively connected with the American Oil Works here following the death of his father Theodore H. Westgate a year and a half ago, has severed active connection with the company and will enter the insurance business here. He will continue to serve on the board of diretocrs.

Refiners' and Jobbers' Supplies

Following are the average market prices for the week on the principal materials used by refiners and jobbers f. o. b. shipping point as effective this date.

***Benzol**

		Apr. 28	Apr. 21
Pure Water White, Tanks	gal.	25-30	25-30
Drums	gal.	30-35	30-35
90% Tanks	gal.	23-28	23-28
Drums	gal.	28-33	28-33

Refiners' Supplies

Soda Ash light 58% bags	cwt.	-$1.38	-$1.38
Silicate of Soda 60 deg. Drums	cwt.	-1.70	-1.70
Sal Soda wks	cwt.	1.10-1.25	1.10-1.25
Caustic Soda 76% solid	cwt.	-3.10	-3.10
Chloride of Lime	cwt.		
Works		1.90-2.30	1.90-2.30
Sulphuric Acid 60 deg. tank cars f. o. b. shipping point	per ton	9.50-10.50	9.50-10.50

Jobbers' Supplies (Open Market)

Vegetable Oils—			
Linseed carloads Spot	gal.	-.90	-.90
May-August		.89-.90	89-.90
Tanks, spot		-.86	-.86
Less carload Spot	gal.	-.95	-.95
5 Bbls.	gal.	-.98	-.98
Less than 5 Bbls. Spot		-.98	-.98
Boiled, tank Spot	gal.	-.88	-.88
Boiled, carloads Spot	gal.	-.94	-.94
*Soya Bean Spot, Tanks	lb.	-.10½	-.10½
Animal Oils—			
English Degras	lb.	-.04¾	-.04¾
Domestic Degras, bbls. carloads	lb.	-.04¼	-.04¼
*Horse	lb.	-.08	-.08
Oleic Acid—			
Dist.	lb.	-.09½	-.09⅝
Saponified	lb.	-.09½	-.09⅝
Lard Oils—			
Prime Winter Strained.. 1 to 1¼ ffa. 40/45c.t.	lb.	.14	$.13⅞
Extra Winter Strained.. 2 to 4½ ffa. 40/45c.t.	lb.	.12¼	.12¼
Extra..... 4 to 5 ffa. 40/45c.t.	lb.	.11¾	.11¾
Extra No. 1..... 7 to 10 ffa. 40/50c.t.	lb.	.11¼	.11¼
No. 1.....15 to 18 ffa. 40/45c.t.	lb.	.10¾	.10¾
No. 2.....22 to 25 ffa. 40/45c.t.	lb.	.10½	.10½
Prime Edible Tallow under 1¾ ffa. 40/45c.t. N.Y.	lb.	08¼-.08¾	08¼-.08¾
Tallow acidless	lb.	-.11¼	-.11¼
Lard Stearine	lb.	-.13¾	-.13¾
Oleo Stearine	lb.	-.10⅝	-.10
Neatsfoot Oil—			
Pure	bbls.-lb.	.14¾	.14¾
Extra	do lb.	.11¼	.11¼
No. 1	do lb.	.10¾	.10¾
Cold pressed	lb.	.18¼	.18¼
Fish Oils			
Menhaden Oil Light pressed	gal.	-.60	-.60
White	gal.	.65-.67	.65-.67
Yellow bleached	gal.	.63-.65	.63-.65
*Herring tank cars coast	gal.	-.50	-.50
Whale, extra winter bleached	gal.	-.81	-.81
Seal	gal.	Nominal	
Naval Stores—			
Turpentine, N. Y.	gal.	.90	-.99
Turpentine†	gal.	.83	.94¼
Rosin B. N. Y.	Bbl.	5.80	5 80
Rosin F. N. Y.	Bbl.	5.80	5 80
Rosin B†	Bbl.	4.40	4 40
Rosin F†	Bbl.	4.60	4.65
Rosin Oil 1st run	gal.	.43	.43
Rosin Oil 2nd run	gal.	.47	.47
Pine Tar—			
Kiln Burnt	Bbl.	11.00	11.00
Retort	Bbl.	11.00	11.00

†Savannah, Ga. market.
*Nominal.

Benzol Demand Heavy, Exceeds Supply

By Special Correspondent

NEW YORK, April 28.—On Saturday, leading crushers were asking 90 cents a gallon for spot raw linseed oil in carlots, cooperage basis, and 89 cents for May-September. However, on a firm bid, the latter figure could probably have been shaded 1 or 2 cents. Demand showed considerable improvement and as stocks are not heavy, crushers look for continued strength during the next few weeks. Consumers, on the other hand, feel that prices will ease off soon. While some factors have been buying more freely, most of the big consumers are operating along hand-to-mouth lines.

Spirits of turpentine in wooden barrels ex yard New York was held at 90 cents a gallon as the market closed on Saturday. The demand was very light throughout the week, and as stocks are somewhat larger than a week or so ago, sellers appear more disposed to press sales. Buyers are following the trend of developments closely, but are not anxious to support the market in its present condition.

Rosins held fairly steady throughout the week. Buyers showed a keen academic interest, but were not inclined to purchase heavily. Stocks on hand are of moderate proportions. Saturday's closing prices were: B to I $5.80; K $5.85; M $5.95; N $5.25; W G $7.10 and W W $7.50.

Benzol was in good demand, and prices were well maintained. Production is increasing but is not quite up to consumption.

The call for bleaching powder is more active and prices are well maintained. Buyers of soda ash and caustic soda are purchasing in a fairly spirited manner. Sulfuric acid was dull and a little easier.

Animal oils were quiet and few price changes of consequence occurred. Buyers are inquiring for larger quantities but are reluctant to operate along extensive lines. Oleo oil is dull and unchanged. Neatsfoot oil failed to divulge any new features. Fish oils were very quiet throughout the week. The call for cod oil is a little better.

Power Plants Use More Oil

CLEVELAND, April 28.—Electric public utility companies in February consumed 1,546,289 barrels of fuel oil as against 1,602,475 barrels in January and 1,472,946 in December. Daily average consumption, however, was greater in February than in either of the two preceding months, being 53,320 barrels daily as against 51,693 barrels in January and 47,514 barrels in December.

WHEELING, W. VA., April 28.—A filling station that will be modern and complete, with rest rooms and other conveniences, will be erected here for Walter F. Burgess.

Crude Oil Prices All Fields

EASTERN FIELDS

	1924 Apr. 28	1923 High		1923 Low		1922 High		1922 Low	
Bradford-Allegany	$4.50	Feb.15	$4.25	Nov.13	$2.60	Jan.1	$4.00	July 19	$3.00
Other Pennsylvania	4.00	Feb.15	4.00	Nov.13	2.35	Jan.1	4.00	July 19	3.00
Cabell	2.20	Feb.15	2.76	Nov.13	1.20	Jan.1	2.61	July 19	1.86
Corning	2.15	Feb.15	2.30	Nov.14	1.25	Jan.1	2.40	July 20	1.75
Somerset	2.30	Feb.15	2.55	Nov.13	1.15	Jan.1	2.40	July 19	1.65
Somerset Light	2.50	Feb.15	2.80	Nov.13	1.30	Jan.1	2.65	July 19	1.90
Ragland	1.10	Feb.15	1.10	July 10	.75	Jan.1	1.25	July 19	1.00

Somerset oil run prior to Oct. 1, 1923, takes price of 6 cents lower than above quotations.

CENTRAL STATES FIELDS

Wooster	$2.15	Feb.19	$2.50	Nov.9	$1.25	Jan.1	$2.70	Sept.21	$1.90
Lima	2.28	Feb.19	2.58	Nov.9	1.43	Jan.1	2.48	July 20	1.98
Indiana	2.08	Feb.19	2.38	Nov.9	1.23	Jan.1	2.28	July 20	1.78
Princeton	2.07	Feb.19	2.37	Nov.8	1.22	Jan.1	2.27	July 20	1.77
Lodi	2.15	Feb.19	2.50	Nov.9	1.25	Jan.1	2.70	July 20	1.90
Illinois	2.07	Feb.19	2.37	Nov.8	1.22	Jan.1	2.27	July 20	1.77
Waterloo, Ill	1.55	Feb.19	1.85	Nov.9	.70	Jan.1	1.75	July 20	1.25
Plymouth	1.45	Feb.19	1.75	Nov.9	.60	Jan.1	1.65	July20	1.15
Canadian Petrolia	2.68	Feb.19	2.98	Nov.9	1.83	Jan.1	2.88	July 20	2.38

MID-CONTINENT AND NORTH TEXAS FIELDS

Below 30	$1.25	39 and above	$2.25
30-32.9	1.45	Currie	2.25
33-35.9	1.75	Mexia	2.00
36-38.9	2.00	Powell	2.00

Magnolia's Price Schedule
North and North-Central Texas, Okla., and Kan.

Under 28	$1.00	39 and above	$2.25
28-30.9	1.20	Corsicana, light*	2.00
31-32.9	1.45	Corsicana, heavy	1.00
33-35.9	1.75	Thrall	1.00
36-38.9	2.00	*Including Powell	

NORTH LOUISIANA-ARKANSAS FIELDS

Caddo, 38 degrees and above	$1.85	do 35 to 37.9	$1.65
do 35 to 37.9	1.75	do 32 to 34.9	1.50
do 32 to 34.9	1.65	De Soto	1.85
do below 32	1.50	Crichton	1.65
Homer, 35 and above	1.85	Bellevue	1.75
do 33 to 34.9	1.75	Smackover, 26 and above	1.35
do 31 to 32.9	1.65	25 to 25.9	1.20
do below 31	1.50	24 to 24.9	1.10
Haynesville, 33 and above	1.75	Below 24 Be	1.00
do below 33	1.65	Stephens 28 and above	1.40
El Dorado, 33 and above	1.85	Stephens 26-27.9	1.35
El Dorado, below 33	1.75	Stephens, 25-25.9	1.20
Bull Bayou, 38 and above	1.80	Stephens Below 25	1.00

GULF COASTAL FIELDS

	1924 Apr. 28	1923 High		1923 Low		1922 High		1922 Low	
Spindletop	$2.00	Mar.15	$1.75	Aug.18	$1.00	Jan.1	$1.25	Dec.30	$1.25
Goose Creek "A"	2.00	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Goose Creek "B"	1.70	Mar.15	1.50	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Sour Lake	2.00	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Humble	2.00	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Batson	2.00	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Hull "A"	2.00	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Hull "B"	1.70	Mar.15	1.30	Jan.1	.80	Jan.1	1.25	Dec.30	1.25
West Columbia	2.00	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Edgerly	2.00	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Vinton	2.00	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Jennings	2.00	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Dayton	2.00	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Saratoga	2.00	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Orange "A"	2.00								
Orange "B"	1.70								
Pierce Junction "A"	2.00								
Pierce Junction "B"	1.70								

WYOMING FIELDS

Elk Basin	$1.95	Feb.17	$2.10	Nov.9	$ .95	Jan.1	$1.90	Aug.4	$1.20
Grass Creek	1.95	Feb.17	2.10	Nov.9	.95	Jan.1	1.90	Aug.4	1.20
Big Muddy	1.50	Feb.17	1.65	Nov.9	.45	Jan.1	1.40	Aug.4	.70
Salt Creek	1.60	Feb.17	1.65	Nov.9	.60	Jan.1	1.40	Aug.4	.70
Lance Creek	1.90	Feb.17	2.10	Nov.9	.80	Jan.1	1.90	Aug.4	.20
Rock Creek	1.70	Feb.17	1.75	Nov.9	.60	Jan.1	1.50	Aug.4	.80
Osage	1.90	Feb.17	2.10	Nov.9	.80	Jan.1	1.90	Aug.4	1.20
Cat Creek, Mont	1.95	Feb.17	2.10	Nov.9	.95	Jan.1	1.90	Aug.4	1.20
Sunburst, Mont	1.05	Fe. 17	1.50	June 6	.70				

CALIFORNIA

14-19.9	$1.00	25-25.9	$1.10	30-30.9	$1.25
20-20.9	1.01	26-26.9	1.13	31-31.9	1.28
21-21.9	1.02	27-27.9	1.16	32-32.9	1.31
22-22.9	1.03	28-28.9	1.19	33-33.9	1.34
23-23.9	1.05	29-29.9	1.22	34-34.9	1.37
24-24.9	1.07			35 and above	1.40

May To Open With Rains, Weather Man Says

CHICAGO, April 28.—Weather in the whole of Standard Oil Co. of Indiana territory this week will be much the same as last. It does not promise to be such as will stimulate business generally, yet there will be some rather large areas which will enjoy sunshine two or three days in succession. Nevertheless, there will be occasional showers.

In the Great Lakes region the showers will be frequent and cloudiness will prevail. Along the Ohio river and southward the week will begin with subnormal temperatures and rain, the whole region growing dryer and warmer until late in the week more rain will come. In the western part of the Chicago forecast district there will be considerable rainfall this week, more in the northern part.

Last week was not altogether a bad one for business among the jobbers. Rain fell pretty generally Sunday and Monday over the northeast quarter of the country, but in the rest was fair weather. Tuesday and Wednesday showers were scattered and light and on Thursday and Friday the east remained dry while the west received rain. Dirt roads the country over are reported to be improving.

Auto Production Climbs Again In March

WASHINGTON, April 28.—Output of automobiles and trucks continued to increase in March, according to reports to the Department of Commerce. Production of passenger cars was exceeded only by the output last May and truck output was greater than in any month except March, April, May and June, 1922. Total of reports from 96 passenger car and 119 truck manufacturers for March compares with previous months' output as follows:

Passenger Cars

	1922	1923	1924
January	81,696	223,819	287,302
February	109,171	254,773	*336,373
March	152,962	319,770	348,396
April	197,224	344 639	
May	232,462	350,410	
June	263,053	337,362	
July	225,086	297,330	
August	249,492	314,373	
September	187 694	298,911	
October	217,566	335,023	
November	215,352	284,923	
December	208,010	275,439	

Trucks

	1922	1923	1924
January	9,576	19,720	*28,850
February	13,350	22,161	*31,096
March	20,022	35 260	34,063
April	22,640	38,056	
May	24,097	43,678	
June	26,298	41,145	
July	22,046	30,663	
August	24 692	30,829	
September	19 462	28,638	
October	21,795	30,166	
November	21,949	28,070	
December	20,354	*27,744	

*Revised.

OIL STOCKS AND FINANCES

Sinclair Reports Deficit For 1923 After Setting Aside Reserves

NEW YORK, April 26

REPORT of the Sinclair Consolidated Oil Corp. for 1923 shows income of $10,000,624 after interests and discounts but a deficit of $1,289,049 after allowances for reserves for depreciation, depletion, and amortization as against a surplus $14,761,742 in 1922 after these charges and dividends on the preferred stock. This sum was equivalent to $3.24 a share on the common stock.

Harry F. Sinclair in his annual report to stockholders said:

"Your directors were faced with serious and difficult problems during the past year, due to the extraordinary conditions that prevailed in the oil industry in general. After careful consideration it was felt justifiable to continue regular dividend payments on the common stock. Large expenditures for increased refining and marketing facilities made in 1922 and 1923, but not effective for profit in those years, offer promise of profit during 1924. At the date of this report the disturbance in the industry has not yet entirely subsided, but much more favorable conditions exist and present indications are for continuing improvement. Notwithstanding the unprecedented conditions encountered by the oil industry, resulting in generally demoralized markets and other serious obstacles to satisfactory progress, your company sold a larger volume of products than in the preceding year. Selling prices were, however, at levels so much below 1922 that gross earnings and miscellaneous income amounted to $107,592,665, as compared with $131,016,745, in the previous year.

"During the year the fixed assets of the company increased $37,957,970. The funded debt was increased $25,000,000 by the sale of 6½ per cent 15-year gold bonds, series "B", but was reduced by retirement of other obligations amounting to $1,368,000, leaving a net increase of the funded debt of $23,632,000. The increase in the fixed assets of the corporation exceeded, therefore, by more than $14,325,970, the increase in the funded debt. The increase of 37,957,970 in the fixed assets resulted largely from expenditures made for the extensions of refining and marketing facilities which were foreshadowed in our last annual report. New construction necessary to more than double the gasoline output at Sinclair refineries is now substantially completed and, with reasonable marketing conditions prevailing, earnings in 1924 and following years should reflect our greatly improved capacity to meet the constantly growing demand for motor fuel. Work on the Sinclair refinery at Marcus Hook, Pa., is still in progress and is scheduled for completion by the end of 1924. With the completion of this refinery the broad program of refinery expansion adopted by your company will have been brought to final fulfilment.

"Crude oil stored by the Sinclair Crude Oil Purchasing Co. amounted at Dec. 31, 1923, to over 41,500,000 barrels, the market value of which has increased since Dec. 31, 1923, by more than $30,000,000. In addition to its interest in the crude oil accumulated by the Sinclair Crude Oil Purchasing Co., the Sinclair Consolidated Oil Corp. owned in the United States through subsidiaries 3,400,000 barrels of crude oil on Dec. 31, 1923, the market value of which has increased since that date by more than $2,500,000. During 1923 the Sinclair Crude Oil Purchasing Co. purchased 24,268,000 barrels of oil and made deliveries of 12,384,000 barrels of oil.

"In view of the abnormal crude oil situation that developed during the year 1923, the activities of our subsidiary crude oil producing companies in the United States were curtailed during the greater portion of the year. The crude oil produced by these subsidiaries during 1923 mounted to 9,291,000 barrels, as compared with 10,305,000 barrels in 1922, a reduction of 10 per cent. In Mexico the company has continued its operations in the heavy oil districts and during 1923 produced 6,556,000 barrels of Mexican oil as compared with 2,893,000 barrels in 1922, an increase of over 125 per cent. Beginning early in 1924 production operations were resumed more actively by Sinclair subsidiaries and these operations will be extended as the needs of our business may require.

The consolidated income accounts of the Sinclair Consolidated Oil Corp. for the last five years follow:

	1923	1922	1921	1920	1919
Gross earnings, misc. income	$107,592,665	$131,016,745	$122,529,187	$166,648,931	$76,970,958
Expenses	94,156,161	100,072,952	111,743,875	131,068,516	54,800,000
Net income	$ 13,436,504	$ 30,943,793	$ 10,785,312	$ 35,580,415	$22,670,898
Interest, discounts, etc.	3,435,880	4,435,809	5,633,756	5,192,198	3,069,662
Balance	$ 10,000,624	$ 26,507,984	$ 5,151,556	$ 30,388,217	$19,601,235
Deprec., deplet., amort.	11,289,673	11,746,241	12,038,334	10,962,257	9,396,419
Deficit	$ 1,289,049	*$14,761,743	$ 6,886,778	$ 19,425,960	$10,204,816
Preferred dividends	1,571,172	204,381	21,232	9,908	.....
Common dividends	8,970,999	4,329,094	.....	.....	.....
Deficit	$ 11,831,220	*$10,228,268	$ 6,908,010	*$19,416,052	*$10,204,816

*Surplus

Consolidated balance sheets of Sinclair Consolidated Oil Corp. as of Dec. 31 compare:

ASSETS

	1923	1922	1921	1920	1919
Real estate, plant, leases, pipe lines, etc.	$291,052,553	$253,094,583	$243,555,676	$261,970,870	$210,372,411
Investments	63,737,573	48,457,539	30,637,745	9,834,443	1,968,604
Specific funds	2,235,050	2,036,307	220,855	405,008	178,033
Cash	7,999,607	29,458,558	6,232,640	12,823,280	7,659,119
Accounts, notes rec.	9,585,387	11,925,775	28,738,362	18,626,533	10,436,985
Employes stock subs.	979,951	.....	.....	.....	.....
Inventories	23,564,717	25,382,957	22,244,868	47,099,157	31,365,595
Advance payments, oil etc.	810,513	.....	.....	.....	.....
Marketable securities†	4,219,580	3,608,045	8,759,149	1,236,658	1,988,077
Deferred charges	8,180,869	5,265,694	2,034,258	2,510,891	1,411,288
Total	$412,365,800	$379,229,458	$342,423,553	$354,506,840	$265,380,114

LIABILITIES

Common stock*	$204,052,441	$204,052,440	$193,018,441	$192,230,605	$191,471,943
Surplus	19,349,795	30,904,178	27,114,190	34,624,229	16,857,798
Preferred stock	19,278,600	20,000,000	322,400	247,700	.....
Minority int. in subs.	109,990	110,090	110,090	114,400	158,462
Deprec. deplet., amort. res.	70,690,881	60,578,467	50,464,882	46,490,104	33,994,653
Funded debt	73,973,000	50,000,000	45,441,600	47,504,000	.....
Purchase money oblig.	4,514,074	4,855,074	4,736,952	4,814,644	4,301,506
Oil, gas certificates	.....	.....	1,114,139	1,394,585	1,971,718
Notes payable	11,600,000	.....	11,075,000	14,352,316	3,200,680
Accounts payable	6,522,924	6,740,970	5,801,455	7,013,683	10,313,215
Accruals, etc.	2,274,095	1,988,239	2,286,908	4,629,993	2,218,719
Suspended earnings, unadj. credits	.....	.....	935,496	1,090,581	831,420
Total	$412,365,800	$379,229,458	$342,423,553	$354,506,840	$265,380,114

*Represented by 4,491,892 shares of no par common stock.
†Includes $1,633,182 bonds and stocks of Sinclair Oil Corp. at cost.

Transactions In Oil Shares on New York Stock Exchange

1923 High	1923 Low	1924 High	1924 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions week ended Apr. 26 Sales	First	High	Low	Last	Ch'ge
.....	.....	48	25	(sh) 200,000	N.P.	American Republics	.....	.....	200	37	37	37	37	—1
29½	24⅛	34⅝	28¼	$49,336,450	$25	Associated Oil	37½cQ	Apr. 25, 24	8,400	29¾	30¾	28½	30¾	+ ¾
160	98¾	140⅛	104	50,000,000	100	Atlantic Refining	$1Q	Mar. 15, 24	3,900	106	114½	†104	114	+3
120	115	118	114	20,000,000	100	do pfd	$1¾Q	May 1, 24	100	115	115	†114	114	—2¾
35	9⅞	18⅞	14	14,000,000	25	Barnsdall Corp. A	.....	Apr. 30, 21	1,000	15	16	14	16	+ ½
22	6	14⅝	10	3,713,275	25	do B	.....	Apr. 30, 21	200	11¾	12	11¾	12	0
9⅛	1¾	5	1⅝	(sh) 150,000	N.P.	Caddo Central O. & R	.....	.....	1,500	1⅝	2¾	1⅝	2⅝	+1
29⅜	17⅛	29¼	22¼	$ 17,377,000	$25	California Petroleum	43¾cQ	Dec. 1, 23	23,000	23	24¼	†22¼	24¼	+1¼
110¾	90½	107	94	12,989,500	100	do pfd	$1¾Q	Jan. 1, 24	800	95½	95½	†94	94	—2
62¼	22¾	40¼	29½	(sh) 1,217,427	N.P.	Cosden & Co	.....	Aug. 1, 23	99,400	32½	34⅜	†29½	33½	+ ⅞
90⅜	83¼	95	90¼	$ 6,998,000	$100	do pfd	$1¾Q	Mar. 1, 24	200	90¼	91	90¼	91	+ ¾
54	23	46¾	31⅜	19,830,000	100	General Asphalt Co	.....	.....	14,100	33⅝	36¾	†31⅜	36	+2
83	60	81	71⅝	7,416,000	100	do pfd	$1¾Q	Mar. 1, 24	300	71½	74¾	71⅝	74¾	+3⅛
.....	.....	.....	.....	.....	.....	General Petroleum	.....	.....	21,600	41	43¾	38⅛	42⅝	+1¾
78	40¾	82⅜	61	25,000,000	100	Houston Oil Co	.....	.....	15,600	65⅞	66¾	†61	66	— ¼
11¼	3⅜	9¼	6⅜	(sh) 450,000	N.P.	Independent Oil & Gas	25c	Mar. 31, 24	4,100	7¼	8½	7¼	8	+ ¾
19	1	2⅞	¾	$ 5,000,000	$25	Indiahoma Refining Co	.....	July 1, 21	1,100	⅞	⅞	¾	¾	— ⅛
8½	3½	5⅞	3¾	7,830,450	10	Indian Refining Co	.....	Dec. 15, 20	600	4¼	4¼	3⅞	4	0
49¾	49½	65	60	2,296,400	100	do pfd	.....	Dec. 15, 21	.....	.....	.....	.....	.....	.....
19¼	7⅛	16⅞	13	(sh) 864,095	N.P.	Invincible Oil Corp	.....	.....	11,400	14	14⅜	13	13⅝	— ⅜
3½	¼	1	½	$ 1,831,390	$10	Kansas & Gulf Corp	.....	.....	700	½	½	½	½	0
28⅜	16	37½	25⅜	(sh) 260,800	N.P.	Maracaibo Oil	.....	.....	18,800	27	29⅛	†25⅜	28⅝	+ ⅝
59⅝	17½	42	33	(sh) 1,736,454	N.P.	Marland Oil Co	.....	July 1, 23	56,300	35⅛	35½	†33	35	0
293	182	.....	.....	$ 45,942,800	$100	Mexican Petroleum Co	$3Q	Apr. 21, 24	.....	.....	.....	.....	.....	.....
105¾	100¼	.....	.....	12,000,000	100	do pfd	$2Q	Apr. 21, 24	.....	.....	.....	.....	.....	.....
23¾	5¾	24⅛	14⅛	(sh) 357,900	N.P.	Mexican Seaboard Oil	.....	June 1, 23	37,900	18¾	20⅞	17⅝	20¾	+2⅛
23¼	6	22¾	12⅜	(sh) 261,000	N.P.	do V. T. C	.....	June 1, 23	11,100	18⅜	20⅜	17⅝	20¼	+2¼
12¼	3½	6⅞	3½	$ 29,798,450	$10	Middle States Oil Corp	.....	July 1, 23	18,600	4⅛	4⅝	† 3½	3⅞	+ ⅛
67	31	33	31⅛	$ 39,626,000	25	Ohio Fuel Supply Co	62½cQ	Apr. 15, 24	100	31⅛	31⅛	†31⅛	31⅛	— ½
3⅛	⅞	2¾	1½	5,359,425	5	Oklahoma P. & R. Co	.....	Apr. 1, 21	3,200	2	2	2	2	0
52⅛	31¼	58¾	45	(sh) 3,500,000	N.P.	Pacific Oil Co	$1S.A.	Jan. 21, 24	133,600	48¼	50⅝	†45	50⅜	+1¾
93⅛	53	61¾	42½	$ 48,292,450	$50	Pan American P. & T	$1Q	Apr. 21, 24	11,700	46	48¾	44⅝	48	+1¾
86	50⅜	59⅜	41¼	81,093,250	50	do Class B	$1Q	Apr. 21, 24	56,400	44½	47⅜	42¼	46¼	+2¼
6¼	1¼	3¾	2¼	(sh) 198,770	N.P.	Panhandle P. & R	.....	.....	200	3	3	3	3	0
68	27⅜	40¼	35	$ 3,855,500	$100	do pfd	.....	July 2, 23	.....	.....	.....	.....	.....	.....
69⅜	19¾	42¾	33¾	(sh) 1,479,671	N.P.	Phillips Petroleum	50cQ	Jan. 2, 24	71,800	38	39⅞	36½	39⅜	+1¾
6	1⅜	4½	1½	$ 29,622,925	$25	Pierce Oil Corp	.....	.....	5,900	1⅝	1⅝	1½	1⅝	+ ⅛
44½	16	39¾	20	15,000,000	100	do pfd	.....	Feb. 1, 22	1,400	21¾	24	21⅝	24	+3
58⅜	17	43½	22¾	11,467,850	50	Producers & Refiners	.....	Sept. 15, 23	24,900	25½	27¾	†22¾	27¼	+1¼
49⅜	36	47½	22	2,845,350	50	do pfd	87½cQ	Feb. 4, 24	100	22	22	22	22	— ½
82	16¼	26¾	21¼	70,091,425	25	Pure Oil Co	37½cQ	Mar. 1, 24	12,100	22¾	23¼	†21¼	22⅞	+ ⅛
100	82½	98¼	92	13,000,000	100	do 8% pfd	$2Q	Apr. 1, 24	.....	.....	.....	.....	.....	.....
55⅛	40½	59½	48	(sh) 611,579	13.40	Royal Dutch, N. Y. shares	$1.24	Feb. 11, 24	5,200	54¼	56	53¾	55⅝	+1⅜
41¼	29⅛	41½	33	(sh) 154,627	£2	Shell Transport & T	$1.13½	July 26, 23	1,000	39⅜	40½	39½	40½	+1½
19¼	12⅜	20⅝	16⅛	(sh)10,000,000	N.P.	Shell Union Oil Corp	25cQ	Mar. 31, 24	29,400	17	17½	†16⅛	17⅜	+ ⅜
95	89½	95	91½	$ 20,000,000	$100	do pfd	$1½Q	Feb. 15, 24	300	93¾	94	93	93	— ½
16	6½	14⅞	10¾	7,201,770	10	Simms Petroleum Co	.....	.....	16,700	12½	14½	12⅜	13⅞	+ ⅞
39¾	16	27⅜	19⅝	(sh) 4,480,459	N.P.	Sinclair Consolidated	50cQ	Feb. 29, 24	44,300	20¾	21½	19⅞	21⅜	+ ⅜
99⅛	80¼	88⅜	80¼	$ 19,278,600	$100	do pfd	$2Q	Feb. 15, 24	500	84	84¾	83¼	83¼	— ¾
35	12⅝	29	22⅜	20,579,090	25	Skelly Oil Co	.....	.....	10,200	23½	24¾	22⅝	24⅜	+ ⅛
64⅜	47⅛	68⅜	55½	232,081,025	25	S. O. California	50cQ	Mar. 15, 24	45,600	57⅜	60	†55½	59⅞	+2¼
44⅛	30⅛	42¼	34¾	502,951,775	25	S. O. New Jersey	25cQ	Mar. 15, 24	17,300	36⅛	37⅛	†34¾	36¾	+ ¾
118¼	114¾	118¾	115⅞	199,972,900	100	do pfd	$1¾Q	Mar. 15, 24	600	117¾	118	117½	118	0
6¾	2	5¼	2⅜	(sh) 982,848	N.P.	Superior Oil Corp	.....	Dec. 20, 20	5,700	4¾	4¾	4¼	4⅜	— ⅜
52⅞	34⅝	45⅜	40¼	$164,450,000	$25	The Texas Co	75cQ	Mar. 31, 24	23,800	40⅞	41⅞	†40¼	41⅝	+1
24¾	5½	15¾	9	8,380,340	10	Texas Pacific Coal & Oil	.....	June 30, 23	3,800	9½	10½	9	10¼	+ ⅝
144	94	151	120	50,002,200	100	Tide Water Oil Co	$1Q	Mar. 31, 24	1,500	125¼	127	120½	127	—1
14½	1¼	6¼	3¾	(sh) 2,859,120	N.P.	Transcontinental Oil Co	.....	.....	24,400	4⅛	4½	3⅞	4½	+ ⅜
99¾	81	104	94	$ 18,000,000	$100	Union Tank Car Co	$1¼Q	Mar. 1, 24	300	100	100	100	100	0
114	100	109¼	106¼	12,000,000	100	do pfd	$1¾Q	Mar. 1, 24	.....	.....	.....	.....	.....	.....
30⅜	20	29⅜	24⅞	(sh) 460,000	N.P.	White Eagle Oil & Ref	50cQ	Apr. 20, 24	1,500	25	25½	†24⅞	25¼	— ¼
5⅞	¼	1⅞	½	(sh) 288,622	N.P.	White Oil Corp	.....	.....	.....	.....	.....	.....	.....	.....

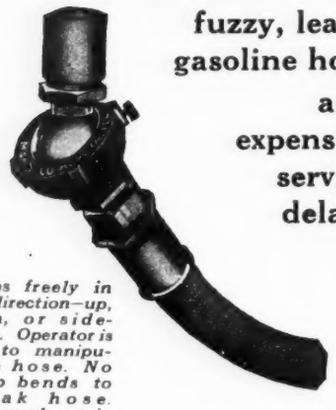
*New High †New Low xEx-Dividend Total Sales 904,400

Standard Oil Stock Traded In New York Curb Market

1923 High	1923 Low	1924 High	1924 Low	Outstanding Capital	Par Value	Stocks	Div Rate	Last Paid	Transactions week ended Apr. 25 Sales	First	High	Low	Last	Ch'ge
19¾	13½	18	15⅛	£3,000,000	£1	Anglo American	22cS.A.	Dec. 17, 23	3,600	15¾	17	15½	16⅞	+ ¾
7⅞	2¾	4⅞	3	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	300	3½	3¾	3½	3¾	+ ¼
150	108	265	155	$ 1,000,000	$100	Borne-Scrymser	$4S.A.	Apr. 15, 24	50	222	222	220	220	—5
94½	69	85½	63½	10,000,000	50	Buckeye Pipe Line	$1Q	Mar. 15, 24	360	66	66	†63½	63½	—1½
237	207	430	238	1,500,000	100	Chesebrough Mfg. Co	$3½Q	Mar. 31, 24	.....	.....	.....	.....	.....	.....
.....	.....	52	50⅝	3,000,000	25	do new w. i	.....	.....	1,600	51¾	51¾	†50⅝	50⅝	— ⅛
118	110	115	115	1,000,000	100	do pfd	$1¾Q	Mar. 31, 24	.....	.....	.....	.....	.....	.....
50	32¼	54⅞	42½	10,000,000	25	Continental Oil	50cQ	Mar. 15, 24	300	42½	42½	†42⅛	42½	—1½
47½	15	20	15⅝	1,500,000	25	Crescent Pipe Line	.....	Sept. 15, 23	.....	.....	.....	.....	.....	.....
168	85	144	110¾	3,000,000	100	Cumberland Pipe Line	$3	Mar. 15, 24	40	130	130	130	130	0
117	87	105	95	5,000,000	100	Eureka Pipe Line	$2Q	May 1, 24	80	95½	96	95½	96	0
78	55	69¾	57	16,000,000	100	Galena Signal Oil	$1Q	Mar. 31, 24	150	58½	59¾	57	58	+2¾
105	104	.....	.....	4,000,000	100	do new pfd	$2Q	Mar. 31, 24	.....	.....	.....	.....	.....	.....
116	108	.....	.....	2,000,000	100	do old pfd	$2Q	Mar. 31, 24	.....	.....	.....	.....	.....	.....
41¼	28	48¾	37	43,750,000	25	Humble Oil & Ref	30cQ	Apr. 1, 24	8,200	39	40⅛	†37	39¾	+ ⅜
171	115	161	130	20,000,000	100	Illinois Pipe Line	$3S.A.	Dec. 31, 23	50	131	136	131	136	—3
123	92	119	99	39,222,750	25	Imperial Oil, coupons	75cQ	Mar. 1, 24	4,255	104½	104½	†99	103	—2
103	78	100	88	5,000,000	50	Indiana Pipe Line	$2Q	Feb. 15, 24	320	91	92	88	92	+ ½
24¼	13¼	22¾	17¾	(sh) 7,118,138	N.P.	International Petroleum	25cQ	Jan. 2, 24	24,100	18¾	19	†17¾	19	+ ⅛
168	123	162	135	$180,000,000	100	Magnolia Petroleum	$1Q	Apr. 5, 24	185	137	137	†135	137	—1
29	19½	25⅞	21¼	6,362,500	12½	National Transit	25cQ	Mar. 15, 24	1,480	21⅜	21½	†21¼	21¼	— ¼
138	70	97	73	5,000,000	100	New York Transit	50cQ	Apr. 15, 24	60	75	77	75	77	+4
109½	90	107½	94	4,000,000	100	Northern Pipe Line	$5S.A.	Jan. 1, 24	240	96	100	96	100	+2
85¾	48¾	79½	60½	60,000,000	25	Ohio Oil Co	25c	Mar. 31, 24	2,300	63	63	†60½	63	—1
45¼	10¾	43	32	10,000,000	25	Penn-Mex. Fuel	.....	.....	200	35	36	35	36	+2½
700	152	269	215	54,803,400	100	Prairie Oil & Gas	$2Q	Apr. 30, 24	8,390	229	229½	†215	223½	—7
335	93	111	100	81,000,000	100	Prairie Pipe Line	$2Q	Apr. 30, 24	1,180	103	104¼	102	104	+1
212½	161	230	183	4,000,000	100	Solar Refining Co	$5S.A.	Dec. 20, 23	180	191	194	186	194	—5
116	87	100	90½	10,000,000	100	Southern Pipe Line Co	$2Q	Mar. 1, 24	190	95	95½	94	95½	+ ½
195	100	171	130	20,000,000	100	South Penn Oil Co	.....	Sept. 30, 22	420	136	136	†130	135	—2
88¼	66¾	89	81	3,500,000	100	Southwest Pa. Pipe Lines	$2Q	Apr. 1, 24	20	83½	84	83½	84	+ ½
69⅞	49½	68¾	55⅝	220,181,638	25	S. O. Indiana	62½cQ	Mar. 15, 24	122,500	58⅞	59½	†55⅝	59¾	+ ⅜
57½	36½	50¾	39⅜	8,000,000	25	S. O. Kansas	50cQ	Mar. 15, 24	3,500	41¼	42	40	41¾	— ¼
133	80	120	102½	16,715,221	25	S. O. Kentucky	$1Q	Apr. 1, 24	6,000	103½	105½	†102½	105	—1
285	186	256½	198	3,000,000	100	S. O. Nebraska	$5S.A.	Dec. 31, 23	380	238	238	227	234	—4
48⅛	35⅛	55¾	38¼	225,000,000	25	S. O. New York	35cQ	Mar. 15, 24	10,700	40¼	40¼	†38½	40	+ ¼
320	270	336	280½	14,000,000	100	S. O. Ohio	$2½Q	Apr. 1, 24	280	298½	299	†280½	299	—2
118	116	119	119	7,000,000	100	do pfd	$1¾Q	Mar. 1, 24	.....	.....	.....	.....	.....	.....
889	21	81	34	1,806,200	100	Swan & Finch	.....	Nov. 1, 19	880	53	53	47	51	—3
58⅛	35½	69¼	56½	60,000,000	25	Vacuum Oil Co	50cQ	Mar. 20, 24	26,000	61⅝	61⅝	57¾	61¼	0
28	19	29	25½	100,000	10	Washington Oil Co	.....	Jan. 31, 22	20	28	28	28	28	0

No More

fuzzy, leaky gasoline hose and expensive service delays



Moves freely in any direction—up, down, or sideways. Operator is free to manipulate hose. No sharp bends to break hose. Thousands are in use.

This swivel joint has solved one of a station's most perplexing problems—the constant wearing out and leaking of gasoline hose at the pump connection. It will solve your same problem, too, as it has for hundreds of other stations.

The MARS SWIVEL JOINT is made of the very best metal available and the construction is such that the hose has free play in every direction without bending the hose at the joint connection. The convenience, simplicity and durability of the MARS recommends it for every pump at every station. Specify MARS swivel joints on every pump you buy from any manufacturer.

Write for Complete Information and Price

MARS COMPANY

181 S. River Street, Aurora, Ill.

Notice of Sale of

EASTERN OIL REFINING COMPANY—*Refinery*, Russell, Penna.

PUBLIC SALE

1000 Barrel Capacity, Splendid Location, Excellent Construction.

Approximately twenty-five acres land along the Conewango Creek, on New York Central Tracks, six miles north of Warren, Pa. Original Plant four years old. New Battery Crude Stills, two years old. Six large Filters, Wax Plant, Barrel House, etc.

Sale to be held in the Court House, Warren, Pennsylvania, May 12th, 1924, at 2 o'clock P. M.

WILBUR F. GALBRAITH,
Master Commissioner,
1308 Farmers Bank Bldg.,
Pittsburgh, Penna.

New York Curb Bonds

Week Ended April 25

	High	Low	Last	Ch'ge
Anglo-Amer 7½s	101⅞	101¾	101¾	+ ⅛
Cities Serv 7sB	123½	121½	121½	— ½
Cities Serv 7sC	94⅞	94⅛	94½	+ ¼
do 7s D	91¼	91	91¼	0
do 8s E	101½	101	101	+ ⅛
Galena S O 7s	105¼	104¾	104¾	— ¼
Gen Asphalt 8s	104¼	104	104¼	0
Gen Pet 6s	96¾	96⅝	96⅝	0
Gulf Oil 5s	95½	95¼	95½	+ ¼
Phillip Pet 7½s W W	102½	100	100	—2¼
Pure Oil 6½s	95¼	94¾	95	— ½
S.O.New York 7s '25	101⅞	101¾	101⅞	— ⅛
do 7s '26	104	104	104	0
do 7s '27	105⅜	105⅜	105⅜	— ⅛
do 7s '28	105¾	105½	105⅝	+ ⅛
do 7s '29	106¼	106	106	— ½
do 7s '30	106½	106	106	— ⅛
do 7s '31	106¾	106½	106¾	0
do 6½s	106½	106¼	106⅜	0
Sun Oil 7s	102	101	101⅞	+ ⅛
do 6s	99½	99½	99½	— ¼
Tidal Osage 7s	104	103½	104	+ ½
United Oil Prod	71	63	63⅛	—8¾
Union Oil Cal 6s '25	100⅞	100½	100½	0
Union Oil Cal 6s '26	100⅝	100⅝	100⅝	0
Vacuum Oil 7s	106⅞	106¾	106¾	— ⅛

New York Bonds

Week Ended April 26

	High	Low	Last	Ch'ge
Atlantic Ref deb 5s	98	97½	98	0
Barnsdall 8s	98	96¼	97½	+ ⅞
Calif Pet s f 6½s	97½	96¼	97½	+1¼
Empire G. & F. 7½s	913⅜	90¼	91¼	+ ⅝
Humble O. & R. 5½s	98½	97¾	98¼	— ⅛
Marland 8s ser A	103¾	103¼	103¾	0
do 8s W W	120¼	120⅛	120⅛	—4⅞
do 7½s ser B	100	100	100	— ½
Mex Pet of Del cvt 8s	102¼	102	102	— ⅛
Pan-Amer Pet & Tr 7s	101	100¾	101	— ¼
Pierce Oil deb 8s	93	92½	93	+1
Prodcrs & Refnrs 8s	109½	109¼	109½	+ ¼
Sinclair Cons col 7s	91½	90⅝	91¼	0
do 6½s	87½	86½	86½	— ⅞
Sinclair Crude 6s	98¼	98	98¼	+ ¼
do 5½s	98⅝	98	98½	0
Sinclair Pipe Line sf 5	83½	82½	83	— ½
Tidewater Oil 6½s	102⅞	102⅜	102¾	— ⅜
Union Oil of Cal 6s	101¼	100¾	101	0
Union Tank Car 7s	104¼	104	104¼	— ⅛

New York Curb Market

1923 High	1923 Low	1924 High	1924 Low	Par Value	Stocks	Transactions Week Ended Apr. 25 Sales	First	High	Low	Last	Ch'ge
10	4¼	7	5¼	10	Ark. Nat. Gas	700	5⅜	5½	5⅜	5½	0
1½	.65	1⅛	.94	1	Boston & Wyo	.....	.....	.....	.....	.....	.....
7⅝	3⅛	6⅝	4⅛	25c	Carib. Synd	1,600	4¼	4⅜	† 4⅛	4⅜	+ ⅛
195	128	155	141	100	Cities Service	430	142½	143	141½	142½	— ½
70	64¼	73¼	67¾	100	do pfd	1,100	71	73¼	72¾	73¼	+ ¼
6⅜	5⅞	6⅞	6⅛	10	do pfd. B	.....	.....	.....	.....	.....	.....
19½	12⅝	16	13⅞	10	do Bkrs. Sh	1,800	14¼	14¼	14	14⅛	+ ⅛
7⅝	1½	5⅞	2⅛	N.P.	Creole Synd	59,200	5⅜	5⅜	4⅜	5¼	0
18½	5	8	6¼	N.P.	Derby O. & R	.....	.....	.....	.....	.....	.....
49½	22	34¼	29	N.P.	do pfd	.....	.....	.....	.....	.....	.....
1	.10	.60	.20	5	Federal Oil	7,000	.26	.27	†.20	.20	—.07
38½	24	46	38⅛	25	General Pet	.....	.....	.....	.....	.....	.....
2⅜	.23	.60	.30	10	Glenrock Oil	1,000	.35	.35	.35	.35	+ .05
68¼	45¾	65	57½	25	Gulf Oil Corp	6,800	58⅛	60	†57½	60	+1
9⅜	1	2⅝	.77	N.P.	Gulf State O.&R	1,400	1.00	1.00	†.77	.77	—.23
4	1½	2⅝	1¼	N.P.	Kirby Petroleum	200	1¼	1¼	† 1¼	1¼	0
5⅛	1½	4⅞	2¾	N.P.	Marland of Mexico	100	2¾	2¾	† 2¾	2¾	— ¼
20¼	12⅞	19½	16	10	Mountain Prod	19,400	18¼	19¼	17⅞	18⅞	+ ⅞
15¼	12⅜	.....	.....	5	Mutual Oil Co	.....	.....	.....	.....	.....	.....
15½	8⅛	14	10¼	5	do cfts	43,200	10⅞	11	†10¼	10⅞	0
6⅝	3½	6¼	4⅞	5	New Bradford	3,200	5⅛	5½	5	5½	+ ½
52	15⅛	22	20	10	New England Fuel	200	22	*22	22	22	0
21⅜	5	14	9¾	25	New York Oil	500	12	12⅝	11½	12⅝	+1⅛
1⅛	.45	.80	.55	10	Omar O. & G	1,200	.70	.70	.68	.68	— .02
13	¾	3½	1⅛	N.P.	Peer Oil Corp	400	1¼	1⅝	1¼	1⅝	+ ⅛
14¾	9¼	15½	12⅝	10	Pennok Oil	4,600	15¼	15¼	14⅝	15	+ ¼
6⅞	2	5⅜	3⅞	N.P.	Ryan Consolidated	100	4½	4½	4½	4½	— ⅛
14	6¼	10½	8⅛	10	Salt Creek Cons	2,400	8½	8⅝	8¼	8⅝	+ ⅛
25¼	15¼	25¼	19⅜	10	Salt Creek Prod	27,600	23⅞	*25¼	23¼	25¼	+1⅝
4⅞	.75	2½	.80	5	Sapulpa Refining	10,300	2⅛	2⅜	1⅞	2⅛	— ⅛
4	.65	1½	.59	5	Seaboard O. & G	33,700	.70	.70	†.59	.60	—.14
13½	6	16	8	10	Tidal Osage	100	10½	10½	10½	10½	0
10⅞	4	8⅜	5⅜	5	Wilcox O. & G	15,400	6⅜	6⅜	† 5⅜	5½	— ⅞

Pittsburgh Stock Exchange

1923 High	1923 Low	1924 High	1924 Low	Par Value	Stocks	Transactions Week Ended Apr. 25 Sales	First	High	Low	Last	Ch'ge
10	4¼	7	4⅞	10	Ark. Nat. Gas	710	5⅛	5¼	5	5¼	+ ⅛
33⅓	33	35⅜	35⅓	N.P.	Columbia Gas	.....	.....	.....	.....	.....	.....
27	22¾	28¼	26½	25	Lone Star Gas	580	27	27	†26¾	27	0
58	51	54⅝	51	50	Manuf. L. & H	265	51½	51½	†51	51¼	— ¼
19	11	16½	12½	1	Ohio Fuel Oil	.....	.....	.....	.....	.....	.....
66	30¾	33⅜	31½	25	Ohio Fuel Supply	785	31⅝	31¾	31½	31⅝	+ ⅛
24	18⅝	25½	22¾	25	Okla. Nat. Gas	610	23⅛	23⅝	23	23	— ⅛
10½	5¾	9¾	7½	5	Pittsburgh O. & G	34	7½	7½	†7½	7½	.....
14	5½	10½	7⅛	10	Salt Creek Cons	1,743	8⅛	8⅝	†7⅞	7½	— ¾
13½	7	16½	9½	10	Tidal Osage	250	11	11½	11	11½	+ ½
.....	.....	92	92	100	do pfd	.....	.....	.....	.....	.....	.....
29½	23¾	29½	27½	25	Union Nat. Gas	515	28	28	†27½	27¾	— ⅛
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Pittburgh Curb Market

1923 High	1923 Low	1924 High	1924 Low	Par Value	Stocks	Transactions Week Ended Apr. 25 Sales	First	High	Low	Last	Ch'ge
.....	.....	2½	2½	N.P.	Arkansas Fuel w.i.	.....	.....	.....	.....	.....	.....
1⅜	.22	.76	.25	5	Colombia Synd	.....	.....	.....	.....	.....	.....
2⅜	.26	.70	.40	5	Duquesne Oil	.....	.....	.....	.....	.....	.....
37	10	9	6	10	Forest Oil	500	8	8	8	8	.....
1¼	1	.15	.15	1	Grant Oil	.....	.....	.....	.....	.....	.....
68	46½	64¼	58	25	Gulf Oil Corp	800	60	60	60	60	+1¼
.03	.02	.....	.....	1	Homer Union	.....	.....	.....	.....	.....	.....
24½	16⅛	21	21	N.P.	International Pet	.....	.....	.....	.....	.....	.....
8½	4	6	5	10	Marshall Oil	.....	.....	.....	.....	.....	.....
.36	.15	.39	.01	1	Mex. Wyoming	1,200	.04	.04	.04	.04	.....
2½	1⅛	2⅞	2	1	Oklahoma Eastern	3,040	2¼	2¼	† 2	2	— ⅜
2	.60	.77	.77	10	Omar O. & G	.....	.....	.....	.....	.....	.....
22½	7	8	6	5	States Oil	.....	.....	.....	.....	.....	.....
.....	.....	14	10	10	Tidal-Osage, non-vote	.....	.....	.....	.....	.....	.....

*New High †New Low xEx Dividend